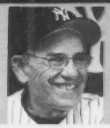
ASBPE Magazine of the Year 2006

FIXES ALL AROUND
Oracle releases 101 patches as part of its quarterly software update. **PAGE 16**



YOGI BERRA, PROJECT MANAGER
IT project leaders can learn a lot from former baseball manager Yogi Berra. **PAGE 44**

COMPUTERWORLD

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OCTOBER 23, 2006 ▪ VOL. 40 ▪ NO. 43 ▪ $5/COPY

IN DEPTH: E-VOTING

E-voting Technology Faces Critical Test

Challenges to results likely if systems fail during election

BY MARC L. SONGINI

The widespread use of controversial electronic voting machines could lead to chaos after next month's midterm elections if, as some critics suggest, losing candidates and their supporters move to challenge the results.

Working under a vaguely worded federal mandate, election officials nationwide have replaced lever-activated machines, punch-card systems and other outmoded voting methods with electronic equipment.

Much of the criticism to date has been aimed at touch-screen systems, or direct recording electronic devices, which critics say aren't rigorously tested and certified and are unreliable and prone to crashing. Critics also contend that DREs are inherently vulnerable to hacking and viruses.

"The potential definitely is there for fraud," said Bruce Funk, former elections director for Emery County, Utah.

E-voting, page 12

INSIDE

The rush to e-voting was spurred by the passage of the HAVA bill in 2002. PAGE 12

E-voting success depends on voter attitudes and best practices, says Robert L. Mitchell. PAGE 38

Feds Start Small on Smart IDs

Agencies race to meet rollout deadline

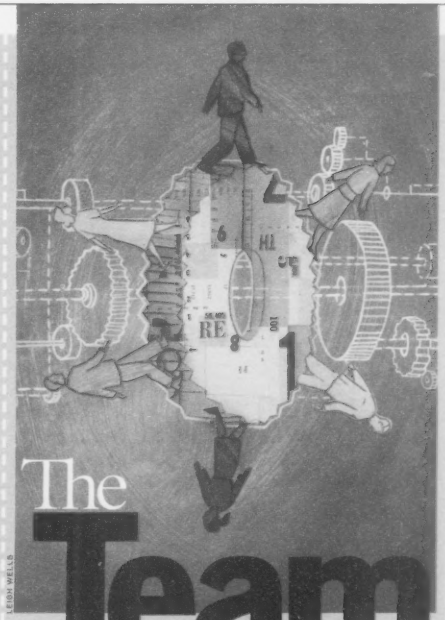
BY JAIKUMAR VIJAYAN

Several federal agencies said last week that they're ready to start distributing smart ID cards to workers by Friday, as mandated by a directive issued in 2004 by President Bush. But some of the initial rollouts will be very small and will focus solely on controlling access to buildings — not IT systems.

For instance, the Social Security Administration became at least technically compliant with the directive last week when it issued one of the new ID cards to Commissioner Jo Anne Barnhart. SSA spokeswoman Kia Green said the agency expects to hand out more cards in the coming weeks but is "still in the process of finalizing the details." She added that the SSA hopes to issue cards to all of its employees and contractors by the end of September 2008, which is the deadline for doing so.

Another agency that said it will meet this week's deadline in a small way is the Environmental Protection Agency. The EPA plans to issue the so-called personal identity verification, or PIV, cards to "a small handful" of employees, said spokesman Dale Kemery. But he added that because of budgetary and technical considerations, making the ID cards available throughout the 18,000-worker agency will be "a fairly long rollout." He de-

Smart IDs, page 55



ERIN WELLS

The Team at the Top

When assembling the top tier of their IT organizations, today's CIOs aren't looking for technologists; they're looking for business leaders.

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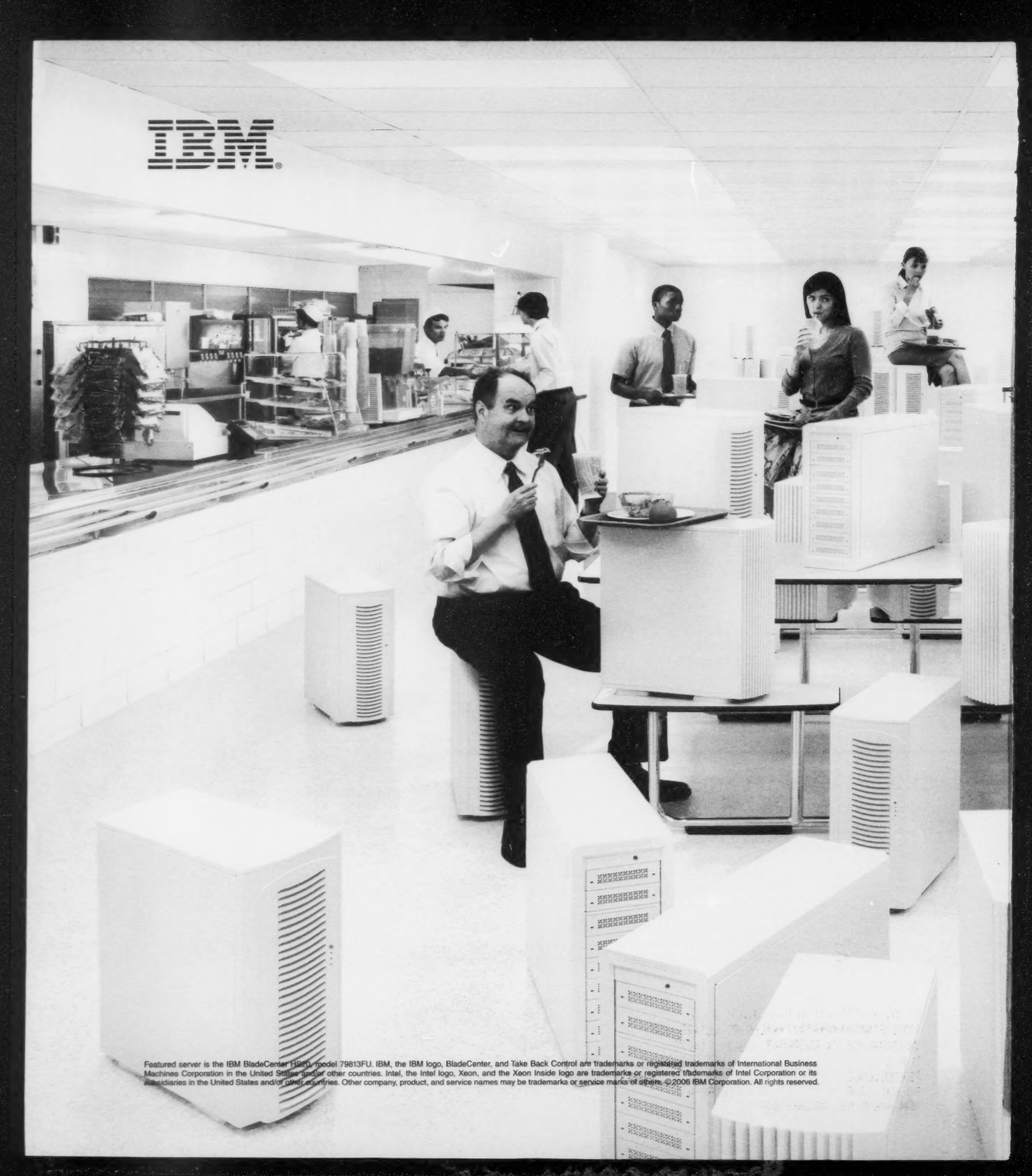

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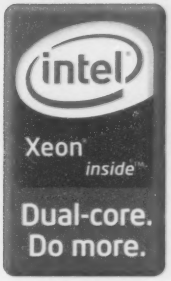


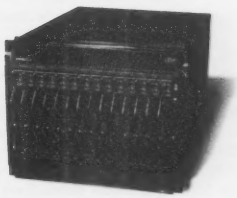
_INFRASTRUCTURE LOG

_DAY 25: They're in the cafeteria!! AAAGGGHHH!! These useless things can't work with each other. They aren't scalable. They aren't responsive. And you can't adjust new capacity on the fly. The horror.

_So many of them, I have to eat standing up. My arches are killing me. And I got avocado on my shirt.

_DAY 26: The answer: IBM BladeCenter® with Dual-Core Intel® Xeon® Processors to boost performance and balance workloads. Its self-automating features make it easy to manage, and it has more blades per chassis for a smaller footprint. The BladeCenter even opened up its specs, so the things we buy today can work with the things we buy tomorrow.

_I can eat my turkey-avocado sandwiches in peace again. Mmmmm...



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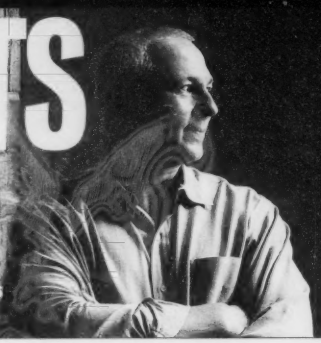

The Virtual Procrastinators
In the Technology section: Matt Datrilo, CIO at PerkinElmer, says server virtualization is going smoothly for his shop. But about half the nation's data centers are still holding back. Find out why. **Page 26**

10.23.06

Managers' Forum
In the Management section: Why do project managers resist the latest and greatest tools? And what's the point of a project plan anyway? Paul Glen comments, and readers talk back. **Page 48**

NEWS

6 **IBM announces** Information Server, a bundle of nine WebSphere data management and integration tools that includes unified user interfaces and a common metadata model.

16 **Oracle issues 101 patches** as part of its latest quarterly software security update, with 45 of the fixes addressing flaws that can be remotely exploited without any authentication.

16 **EMC unveils** two upgraded Clariion arrays that support both the iSCSI and Fibre Channel protocols, plus an entry-level Symmetrix array and five Celerra NAS systems.

18 **Global Dispatches:** Microsoft now says Windows Vista will ship on time in Europe.

20 **The California ISO**, which manages the state's power grid, is replacing Excel spreadsheets and business intelligence tools from several vendors with a line of products from Actuate.

20 **Q&A: Mark Canepa**, the new president and CEO of Extreme Networks, talks about his plans for the troubled company — which faces declining revenue, Nasdaq delisting and a stock-options investigation.

55 **Cisco enters** the video-conferencing market with two systems designed for conference rooms. Meanwhile, established vendor Polycom announces a line of three high-definition systems.

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36 **Q&A: BI at Age 17.** Howard Dresner, who coined the term "business intelligence" in 1989, evaluates the past 17 years of BI and predicts that business process management will be the next big thing.

34 **Security Manager's Journal: Enterprise DRM Back to the Fore.** Mathias Thurman had lost funding for his effort to protect intellectual property, but the CIO puts it back on the table.

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41 **The Team at the Top.** When today's CIOs assemble their top IT teams, they don't look for technologists; they look for people with leadership skills and business acumen.

44 **Yogi Berra, PMP.** IT mentor and project manager Ralph Sacco has discovered that the ever-quotable baseball legend has a lot to say about his line of IT work.

45 **Career Watch.** Jerry Luftman of the Society for Information Management discusses employers' concerns about attracting, developing and retaining IT professionals. Plus, we look at the latest employment numbers; the skills CIOs are seeking; and your employer's health care costs.

OPINIONS

8 **On the Mark: Mark Hall** suggests that new video e-learning tools might make IT a star to end users.

22 **Don Tennant** contends that Mark Hurd's appointment of former NCR colleague Jon Hoak as chief ethics officer smacks of cronyism and self-preservation.

22 **Thornton A. May** exhorts his readers to be the thought leaders who will clarify IT's role for the business.

23 **John Halamka** proposes Pele's Law to explain how power consumption and heat issues limit a data center's server capacity.

38 **Robert L. Mitchell** says solving e-voting's technical problems will be the easy part. Implementing it properly will be harder.

50 **Bart Perkins** advises treating your customers as if they could take their IT business elsewhere. More and more, they can.

58 **Frankly Speaking: Frank Hayes** says the password is *kR@Zee*.

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Should You Be Watching?

SECURITY: Jay Cline knows what the law allows when it comes to monitoring employees, but he wonders whether it's wise to do all that the law permits.
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Four Tips When Going Mobile

NETWORKING: An expert provides suggestions on how to succeed when your organization decides to scale up its mobile access.
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Better Planning

SECURITY: When the lines between policies, controls and specifications get muddy, your IT security plan suffers. Columnist Jon Espenschied explains the difference between the *why* and the *how* of a solid security plan.
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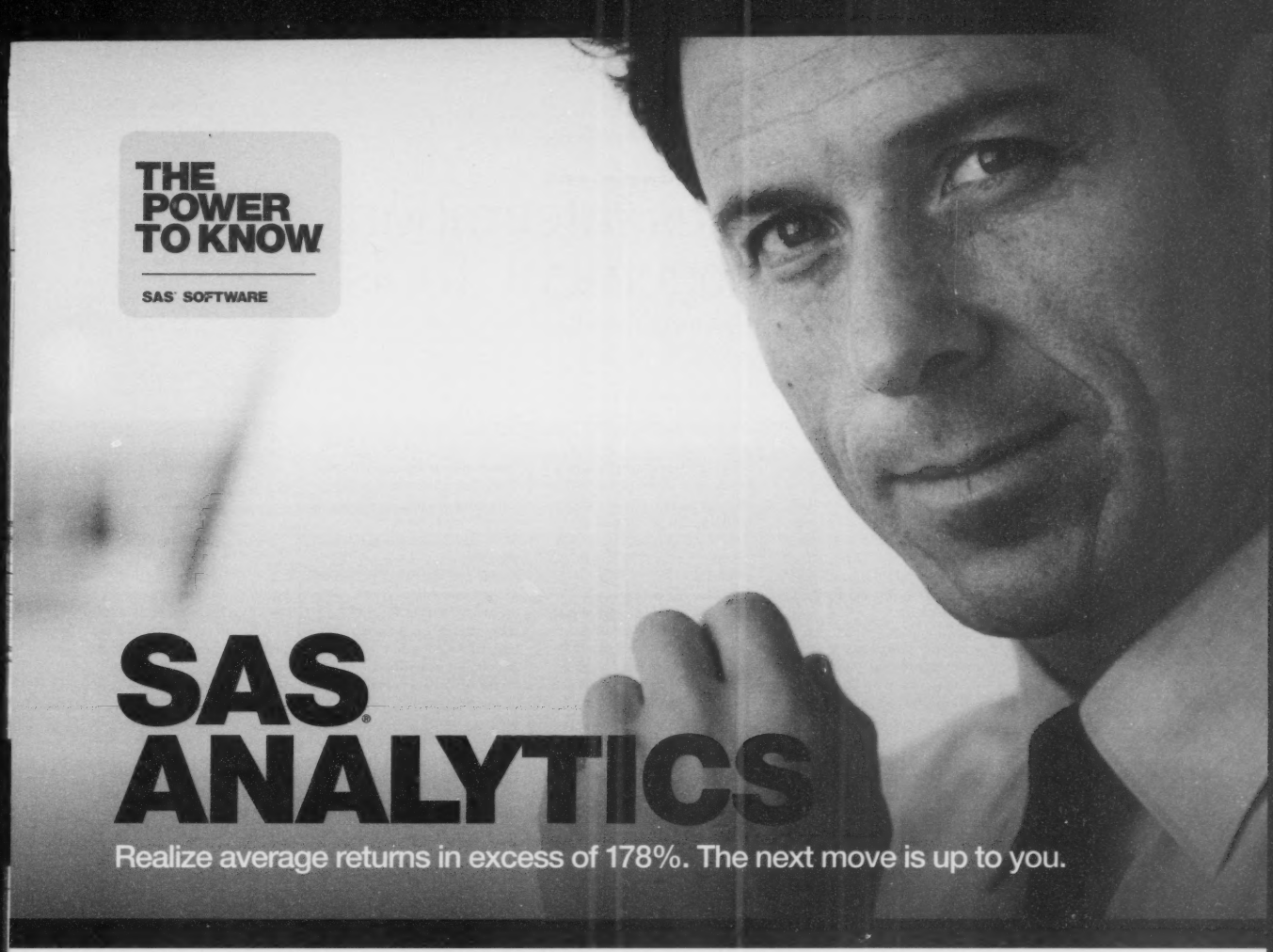

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AT DEADLINE

EMC to Fire 1,250 As Q3 Profits Drop

EMC Corp. plans to cut up to 1,250 jobs as part of an effort to consolidate operations after acquiring 21 companies over the past three years. EMC employs 31,000 people. The announcement came as EMC reported third-quarter earnings of $283.7 million, down from the year-earlier total of $421.7 million. Third-quarter revenue increased to $2.8 billion from $2.4 billion. EMC said most of the job cuts will be redundant middle management posts.

Software Sales Boost SAP Sales, Profit

SAP AG cited continued growth in sales of its business applications for strong third-quarter revenue and profit gains.

SAP BY THE NUMBERS

	REVENUE	
Q3 '06	$2.83B	$489M
Q3 '05	$2.54B	$421M

Microsoft Reissues Windows Patch

Microsoft Corp. has reissued a Windows security patch that it published on Oct. 10 because the software did not work properly on Windows 2000 systems. The company acknowledged that the original patch did not correctly configure a Windows Registry setting called a "kill bit," to prevent Windows 2000 from running software that could be attacked. The patch, described in security bulletin MS06-061, was created to fix problems in the Windows XML parser.

EDS Increases Stake In Indian Outsourcer

Electronic Data Systems Corp. has agreed to purchase an additional 20% stake in Bangalore, India-based outsourcer Mphasis BFL Ltd. for about $150 million. The offer requires the approval of Mphasis shareholders. If the sale is approved, EDS would own about 77% of the company. EDS had acquired a 52% stake earlier this year and merged its own Indian subsidiary with Mphasis.

IBM Meshes Integration, Data Management Tools

Bundles WebSphere products together, unifies user interfaces and metadata

BY PATRICK THIBODEAU
ANAHEIM, CALIF.

HERALDED BY a seven-piece band and the concert-like trappings of flames, smoke and strobe lights, IBM last week announced a software offering that integrates nine of its tools for managing various types of data and making the information available to end users.

IBM's Information Server, which will be available next month, is intended to be a one-stop shop for companies that are seeking tools to help them deal with data-intensive applications such as business intelligence. Priced at $125,000 and up, depending on the number of product modules purchased, Information Server combines existing data cleansing, integration and metadata management tools from IBM's WebSphere product line.

Unified Approach

But IBM officials said the bundled offering is based on a new architecture that provides common metadata, unified user interfaces and a set of shared services for tasks such as security and reporting.

Information Server supports service-oriented architectures and includes connectors to various databases and sources of unstructured data, as well as mainframe and packaged applications.

Ambuj Goyal, IBM's general manager of information management, said at the company's inaugural Information on Demand Global Conference here that until now, IT staffs have had to configure applications to make calls to other data sources to obtain information for end users. But Information Server will enable users to "get information from multiple sources, reconciled and bi-directional," Goyal said.

Frank Brooks, chief data architect at BlueCross BlueShield of Tennessee Inc., already uses many of IBM's data management tools. But Brooks said that data integration problems "are getting far too complex" for any one product to handle.

Managing data used to mean taking information from a relational database and running a report, Brooks said.

"Now, it's not just internal data; it's external, and it's also content" — meaning e-mail and other material that isn't stored in a database, he added.

Brooks said that IBM has been good about working with third-party vendors on product integration. "I think they realize that they can't provide every possible solution," he said. For instance, the insurer uses a tool developed by ClearForest Corp. to analyze unstructured data in conjunction with IBM's tools.

Information Server will work with various third-party tools, said IBM officials. But unlike the WebSphere software that has been incorporated into Information Server, the third-party tools won't be able to use the full capabilities of the bundled offering.

Hurkan Balkir, IT director of marketing solutions at Experian Group Ltd.'s offices in Schaumburg, Ill., said the credit reporting firm had to develop its own metadata to connect the IBM data management tools it uses. IBM is heading in the right direction by creating a common metadata model for the products in Information Server, Balkir said.

Information Server

The following tools are among the products in IBM's data management bundle:

INFORMATION ANALYZER: Profiles source systems and monitors data rules to eliminate the risk of proliferating "bad" data.

DATASTAGE: Extracts, transforms and loads data from multiple sources and target systems.

QUALITYSTAGE: Standardizes and matches information across mixed sets of data sources.

METADATA SERVER: Supports unified management, analysis and interchange of metadata through a shared repository.

Other vendors are also building integrated suites of data management tools, said Rob Karel, an analyst at Forrester Research Inc. He added that adopting a bundled tool set doesn't preclude a best-of-breed approach by users.

But they don't get the same value from best-of-breed tools, Karel said, because the integration within products like Information Server "is embedded vs. plug-and-play." ◗

Exec Says IBM Seeks Simplification, Not Lock-in

AMBUJ GOYAL, general manager of information management at IBM, spoke with *Computerworld* last week after the company announced its Information Server bundle of tools. Excerpts from the interview follow:

Usually, when vendors create an integrated product suite, some users eye it warily as an effort to create lock-in and squeeze out best-of-breed rivals. How do you respond to those kinds of concerns about Information Server? We don't do anything unless customers ask for it. They asked for simplification. They were spending time integrating my products rather than solving the [issue of] business value. I believe we are best of breed in all of the technologies today, and in the future, if we are not, we don't force customers not to deploy best of breed. We interact and work with open standards.

If customers want to use a third-party product with Information Server, will it be possible to fully integrate them? It should be – if [third-party vendors] follow standards. If they don't follow Web services standards, if they don't follow metadata standards, it will be hard to integrate. In fact, that's been our strategy in the software group since 1995, when the software group was founded, that we will win by better execution, not by controlling APIs.

Is Information Server tied in with your services organization, so that users are going to be co-opted into buying a lot of IBM services? No. The concept of Information Server was to reduce the drudge work associated with integrating and deploying our technology and [to let users] focus more on [work] associated with transforming a business.

What kind of influence do data management and products such as Information Server have on internal IT management models? Information Server will force some of the data governance that people have been struggling with. By defining just simple glossaries – by just getting an agreement on that before you start doing an information integration project – it helps [users] do data governance. And the more they focus on data governance, the better management of data they will have. Companies are starting to have chief data officers, or chief information officers – [someone focused on] the information, not the traditional CIO – whose job it is to get control of the data: customer, price, orders, locations.

– PATRICK THIBODEAU

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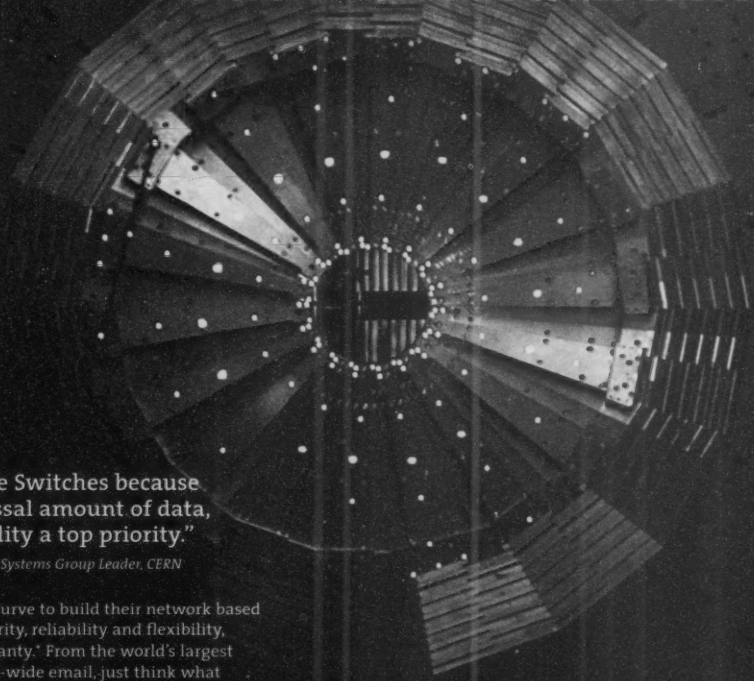

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BRIEFS

HP Extends Offer for Mercury Interactive

Hewlett-Packard Co. has extended its tender offer for all of Mercury Interactive Corp.'s common stock until midnight Eastern time on Friday. The previous deadline was Oct. 13. HP first agreed to acquire Mercury for $4.5 billion in July in an effort to enhance its IT management software and services business. Adding Mercury would boost HP's annual software revenue to more than $2 billion.

Microsoft Increases R&D Spending Plans

Microsoft Corp. CEO Steve Ballmer said the company plans to spend $7.5 billion in research and development in fiscal 2007 – more than analysts had expected, and $1.3 billion more than Ballmer had previously projected. Much of the investment is expected to be used to build out Microsoft's online services, branded Windows Live, and to develop content for Microsoft's MSN Web site.

Intel Posts Decline In Q3 Sales, Profit

Following layoffs and executive shuffles, Intel Corp. reported a third-quarter profit of $1.3 billion, which beat the estimates of financial analysts but was 35% below last year's results.

INTEL BY THE NUMBERS

	REVENUE	PROFIT
Q3 '06	$8.7B	$1.3B
Q3 '05	$10B	$2B

McAfee Buys Israeli Software Vendor

McAfee Inc. has acquired Onigma Ltd., a Tel Aviv-based vendor of data leak prevention software, for $20 million. Onigma's Flow-Control software was designed to prevent the unauthorized transfer of data over a network by e-mail or malicious software and the copying of data to devices that attach to PCs, such as USB drives or printers. McAfee said it plans to ship its own version of Flow-Control, called the McAfee Data Loss Prevention Solution, in the first quarter of 2007.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL

MATTHEW FAULKNER

Corporate YouTubes May Make Stars . . .

. . . out of IT departments. Corporate videos with high production values have been around forever. Making them useful and available to business units, partners and customers is a relatively recent phenomenon, says Ted Cocheu, CEO of Altus Learning Systems Inc. in Los Gatos, Calif. To make them useful, he says, videos must be searchable by the spoken word. According to Sebastian Grady, Altus' chief operating officer, the company's Rapid eLearning service records corporate presentations, manually indexes the spoken text, synchronizes it to video and PowerPoint images, and stores everything on a private, secure Web site. The site can be accessed only by authenticated users. Grady says Rapid eLearning also indexes company podcasts. By Q2 of next year, Cocheu says, Altus will add community and collaboration tools, such as video-content-related discussion forums. Although hardly a path to Hollywood, CIOs might consider directing a few programs to prepare end users for upcoming software rollouts. End users would be able to search the instructional videos only for the parts that interest or involve them, saving them time and making you a star, at least in their eyes. There's a one-time, implementation-specific charge to set up a Rapid eLearning Web site. After that, it's $2 per month per user.

COCHEU: Search video by spoken word.

Location-based services mixing up . . .

. . . data types to create new applications. Some mixes are easy, but some can be a "beast," says Marc Priolean, vice president of marketing at deCarta Inc. in San Jose. The easy stuff, such as blending a database of restaurants and hotels to a static map, is nice, but it's not where the action is, he says. The company's Drill Down Server (DDS) software can be used to create interactive routing maps that improve fleet logistics by giving drivers more precise routes that take into account real-time traffic, time-based turning restrictions, right-turn/left-turn driving patterns and other events that affect delivery performance and driving costs, Priolean notes. "Routing algorithms are a very complex beast," he says. This week, deCarta will release a beta version of its draggable maps feature using JavaScript. The DDS software is custom-priced.

Blend data for better location-based services, says PRIOLEAN.

AJAX vendor jacks up enterprise . . .

. . . apps like magic. Next month, JackBe Corp. in Chevy Chase, Md., will release a beta version of its Presto software, which can help IT create and manage interactive, Web-based applications. Chief Technology Officer John Crupi calls Presto "upperware" because it sits above your service-oriented architecture middleware, authorizing AJAX-based apps to use available SOA services. Presto includes an AJAX Service Bus, so apps can subscribe to SOA-based events that are automatically sent to a browser. Likewise, an enterprise service director governs all of your available SOA services so IT can control access to those services. Crupi targets Q1 of 2007 for the final release of Presto. Pricing will be $20,000 per CPU.

Leverage innate component . . .

. . . services for agent-free SOA management. Non-SOA tools often have SOA capabilities, so why not use them? That's the logic behind the release later this quarter of AmberPoint 5. According to Ed Horst, vice president of marketing at AmberPoint Inc. in Oakland, Calif., the updated software will continue to use its agents on systems and software to enforce runtime policies for SOA services. In the update, however, the governance engine in AmberPoint is no longer solely dependent on agents. Some hardware and software products, such as the enterprise service bus from Iona Technologies PLC in Dublin and switches and routers from F5 Networks Inc. in Seattle, include services that AmberPoint can now manage without adding agents. Pricing starts at $35,000 per CPU. Agents, if you need them, are free.

HORST: Manage your SOA world with or without agents.

Accelerate your real and virtual . . .

. . . local network traffic like a god. Zeus Technology Ltd. in Cambridge, England, plans to release next month a version of its Zeus Extensible Traffic Manager (ZXTM) to work as a virtual appliance with a VMware Inc. server. And, says CEO Paul Di Leo, Zeus is "in discussions with" XenSource Inc. in Palo Alto, Calif., to offer similar services for the Xen virtual environment. It already works with Solaris, Linux and FreeBSD.

Zeus says its ZXTM appliance boosts network traffic performance.

Di Leo claims that ZXTM inspects packets on your local network, understands the business logic they entail and routes them to the appropriate server. It also off-loads other servers from Secure Sockets Layer and XML processing for faster application response. ZXTM comes as either software or an appliance. Pricing starts at $5,700. ▸

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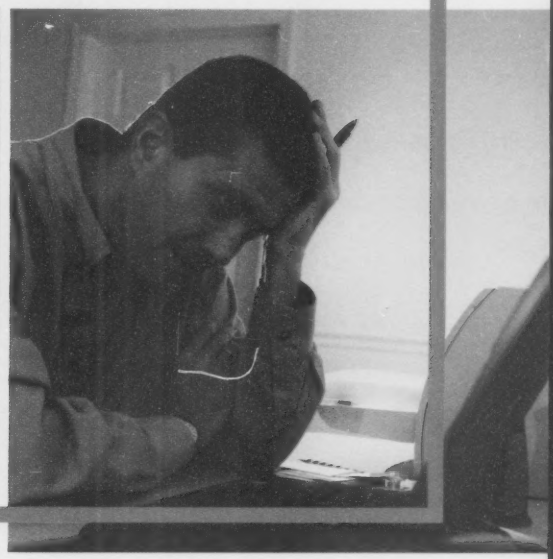

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Windows Server 2003

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LONDON STOCK EXCHANGE CHOOSES WINDOWS OVER LINUX FOR RELIABILITY

Tom Nagy for The Highly Reliable Times

THE HEADQUARTERS BUILDING of the London Stock Exchange, located in London's Paternoster Square.

Microsoft

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special edition

Reliability Is Key in the "World's Capital Market"

By MICHAEL BETTENDORF

LONDON, Oct. 2006 — When an IT system must process 15 million real-time messages per day, with peaks at 2,000 messages per second, even one second of downtime counts. That's the pressure the London Stock Exchange faced when building Infolect, the Exchange's real-time stock-ticker information delivery system.

The solution had to have rock-solid reliability, nothing less. "Reliability is one of the key attributes of the Exchange in its technology systems. These systems have to work every day, 24/7, to make sure the markets are there," said CIO David Lester, who evaluated both Linux and Microsoft® Windows Server® 2003 for the Exchange's core technology systems. "We looked at a number of different platforms for our Technology Roadmap, and we lined up our business requirements with the capabilities of those platforms, and Windows Server was the clear choice."

In Lester's view, long-term reliability is a function of a solid relationship: "We wanted a deep partnership with an organization that could deliver the kind of mission-critical technology that we needed, and we felt Microsoft delivered just that."

For the full London Stock Exchange case study, plus other case studies and independent research findings on the reliability of Windows Server versus Linux, visit microsoft.com/getthefacts

BREAKING NEWS: London Stock Exchange Achieves Record Reliability

London Stock Exchange CIO David Lester (above) cites Windows Server as key to maintaining system reliability and performance.

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RELIABILITY NEWS & NOTES: A study released yesterday found that Windows Server was

JOURNALISM BEAT: Continued growth for reliability-focused newspapers A worldwide survey tracking trends in newspaper use

BRIEFS

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IBM BY THE NUMBERS

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Early Glitches

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Some experts fear that if such problems continue next month, some results will be challenged in state and federal courts, which could lead to significantly increased voter skepticism of the e-voting process.

Some results have already been challenged: A group of California residents unsuccessfully sued Mikel Haas, San Diego County's registrar of voters, after a tight special congressional election on June 6, because some election workers stored touch-screen machines in their homes, under seal, prior to the elections.

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Rubin, also an elections judge in Baltimore County, Md., said he couldn't predict whether there will be e-voting problems next month. However, he noted, "at this point, if there's a software problem — or, worse, if the machines have been rigged — then there's nothing officials can do. They've dug themselves too deep a hole."

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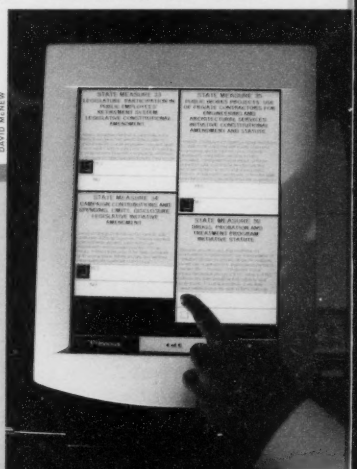

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Shamos did acknowledge that it generally takes three elections to adequately train poll workers in the use of e-voting machines and familiarize them with the e-voting process. Thus, he said, mistakes in setting up machines, booting them up and printing reports are likely in the coming election. "Nothing fatal, but plenty for people to yell about," Shamos said.

Sam Reed, secretary of state for the state of Washington and past president of the National Association of Secretaries of State, said some problems are likely occurring simply because new systems are being used. "We know that at any time you convert to a new system, snafus are bound to [happen]," he said.

Reed also said he expects that the vendors of DRE machines "will be spread awfully thin" trying to provide training and support services throughout the country.

In next month's election, e-voting machines will be used in five Washington counties, he said. In those counties, the machines will include a so called voter-verified paper trail, which has eased the fears of some critics, Reed said. Systems that produce paper records of votes will also be used in Ohio and California.

The paper trail allows voters to view a printed copy of their selections that is stored in or on the machine. Election workers can match the paper votes to the records in the machine's memory card to ensure that tabulations are accurate.

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The state pays the university about $500,000 annually to monitor elections and collaborate with election workers, he said.

The state mandates that all election officials be trained by the Kennesaw University staff in e-voting security procedures, such as maintaining a chain of custody over machines to prevent unauthorized tampering, he said.

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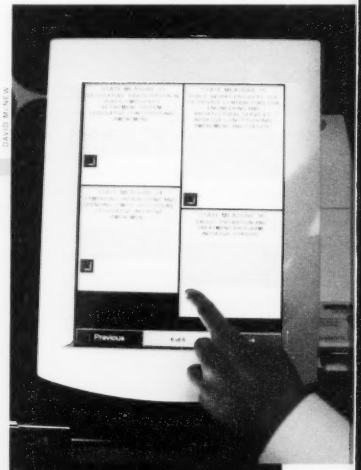

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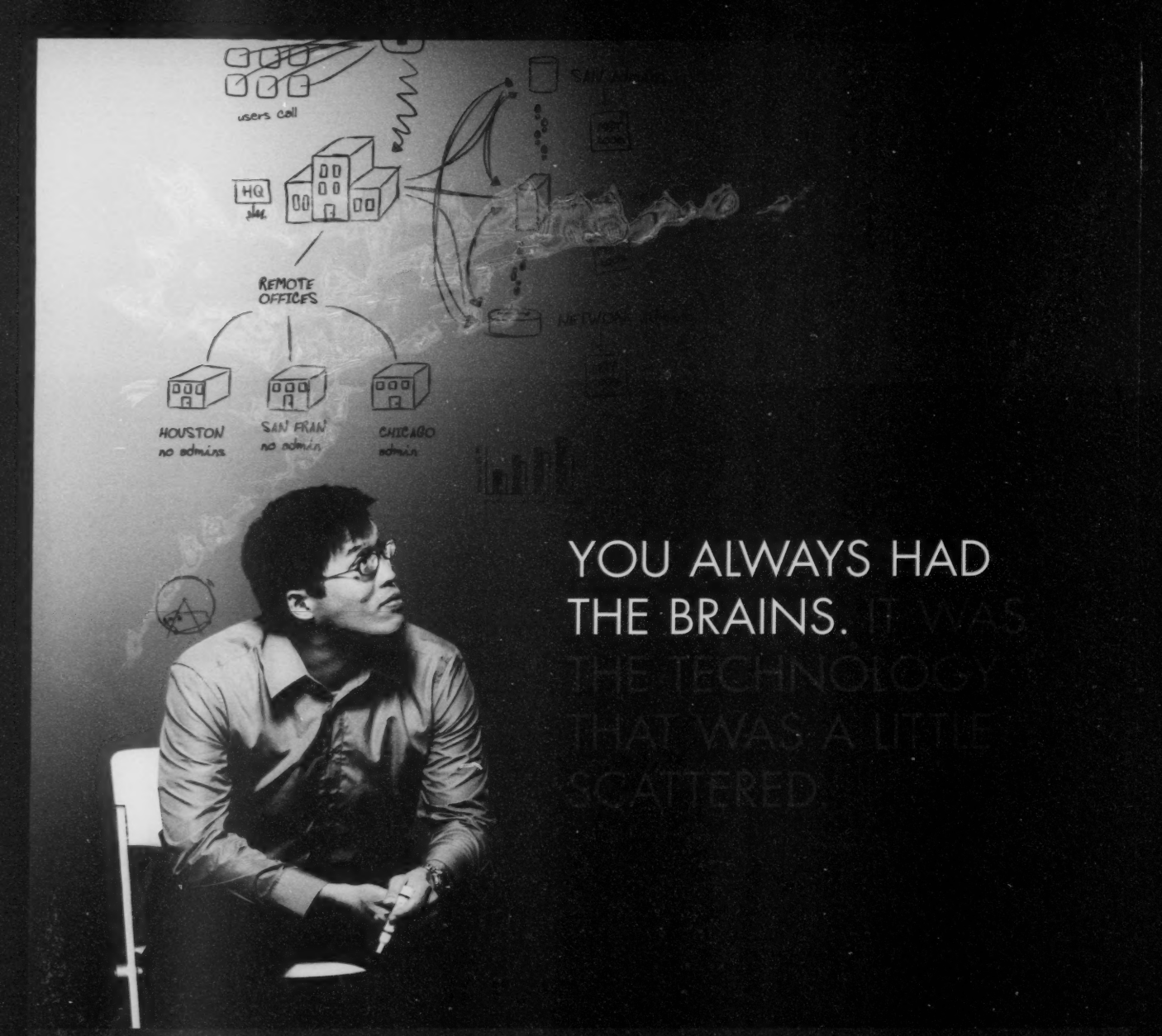
SOURCE: DOUGLAS JONES, UNIVERSITY OF IOWA



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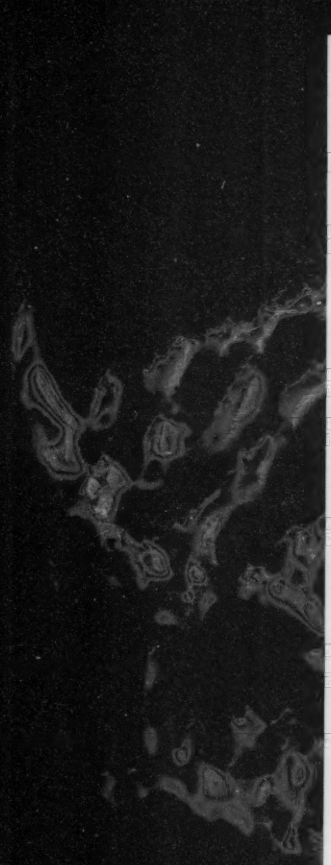

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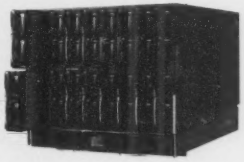

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Oracle Tops Century Mark With Latest Patch Release

Vendor issues 101 software fixes as part of quarterly update; more on the way

BY JAIKUMAR VIJAYAN

ORACLE CORP. last week released a total of 101 software patches to fix security vulnerabilities across its entire product line. It described 45 of the patches as being aimed at flaws that could be remotely exploited without requiring any authentication.

The company said an unspecified number of additional patches that are still in the works will be issued this week.

Among Oracle's latest quarterly patch releases were 63 fixes for its databases and supporting products, 14 for its application server software, 13 for its E-Business Suite applications and nine for the PeopleSoft and J.D. Edwards applications that the company acquired when it bought PeopleSoft Inc. early last year.

Oracle moved to the quarterly security-fix schedule in November 2004 in response to user demands for a more streamlined patching process. Since then, the vendor has come "a long way" in improving its procedures, said Rich Niemiec, a former president of the International Oracle Users Group and CEO of TUSC, an Oracle-oriented consulting firm in Lombard, Ill.

Feedback Considered

For example, increased documentation that Oracle started making available with the latest batch of fixes — including a list of the remotely exploitable flaws — makes it easier for IT managers to identify relevant patches and calculate the resources required to install them, Niemiec said. He added that Oracle officials often solicit feedback from users on how the company is doing on its patches.

But Amichai Shulman, chief technology officer at security software vendor Imperva Inc. in Foster City, Calif., said one concern for users is that at least five of the 22 database-specific flaws addressed by last week's updates appear to be similar to vulnerabilities that Oracle supposedly had patched previously. "There is something alarming about this trend of the same vulnerability repeating itself in the same database package," Shulman said.

David Litchfield, managing director of Next Generation Security Software Ltd. in Surrey, England, said that in principle, Oracle's decision to move to a quarterly schedule on patches was sound. But "in practice, all the benefits that regular patch releases offer are negated because they fail to keep to their committed schedules," he added.

For instance, the latest round of patches didn't include fixes for several database versions in which flaws have been discovered, Litchfield said. He also claimed that Oracle has often re-released patches because of problems with them. In fact, the only time Oracle has had all of its planned fixes ready on the appointed day or didn't subsequently re-release any of them was with the updates it put out in July, according to Litchfield. "Getting it right one out of eight times is abysmal," he said.

In a posting on its security blog, Oracle said that more than one-third of the vulnerabilities patched last week "are in an optional product and do not affect most customers."

Responding to the comments of Shulman and Litchfield, an Oracle spokeswoman said that since most of the company's patches are cumulative, they contain security fixes that may have been included in previous patches.

She added that Oracle sometimes delays patch releases because it needs more time to test or modify a fix "so it meets our quality exit criteria." Patches that were missing from last week's release will be made available by tomorrow, the spokeswoman said. ▸

Patch Parameters

Key facts about Oracle's quarterly software update:

- The vendor said it is releasing 101 fixes designed to address separate vulnerabilities.
- 45 of the patches are for flaws that can be remotely exploited without authentication.
- The highest risk rating that Oracle gave a database flaw was 4.2 on a scale of 1 to 10, using the standard CVSS metric.

EMC Adds Dual-Protocol Support to Clariion

BY SHARON FISHER

EMC Corp. today is set to unveil two upgraded Clariion CX3 midrange storage arrays that support both Fibre Channel and iSCSI protocols.

The company will also bring out new monitoring software for the Clariion arrays and new models in its Symmetrix and Celerra lines.

Tom Henson, infrastructure manager at Molex Inc. in Chicago, said the maker of electrical connectors beta-tested the upgraded Clariion CX3-40 Fibre Channel/iSCSI system and found it easy to use. But he noted that his company has no plans to purchase one of the arrays at this point.

Molex currently runs an EMC Fibre Channel array at its headquarters and EMC Clariion CX300i iSCSI storage systems at two remote offices.

Henson said that the company will further evaluate the new Clariion models for possible purchase when the Clariion CX700 Fibre Channel system used at its headquarters reaches the end of its life.

EMC doesn't plan to add iSCSI support to the Clariion CX3-80, the other member of the CX3 family, said Barbara Robidoux, the vendor's vice president of storage product marketing.

John Hegner, vice president of technology services at Liberty Medical Supply Inc. in Port Saint Lucie, Fla., said dual-protocol arrays are a natural progression for EMC.

Nonetheless, Hegner said his organization has no plans to expand beyond its EMC Fibre Channel systems at this point, though Liberty Medical will consider the new offering.

The new systems are available now. Upgrades from the current models will be available in 90 days, according to Robidoux.

EMC's new Navisphere Quality of Service Manager software runs on all of the Clariion systems, and it can be used to monitor and optimize their performance.

EMC also announced an entry-level version of its Symmetrix high-end storage array, five new models in its Celerra line of network-attached storage systems and three disk libraries that use the company's UltraScale 4Gbit/sec. technology. ▸

Users Look for Details on Next Oracle DB Release

AT ITS ANNUAL OpenWorld conference in San Francisco this week, Oracle is expected to divulge details about the enhancements it plans to make in the next version of its flagship database, which began initial beta testing last month.

Oracle last week declined to comment about any new products. But users and analysts said they expect the next release to include enhancements to the database's grid computing, clustering and XML capabilities, as well as new security features and increased automation to ease database administration tasks for smaller companies.

Oracle released the first beta of the software last month, said Ari Kaplan, president of the International Oracle Users Group. For now, the planned upgrade is mostly being referred to by users as 11g, hewing to the naming convention Oracle used when it released Version 10g of its database in 2004.

Kaplan, a senior consultant at Datalink Corp. in Chanhassen, Minn., said he has seen the 11g beta release but he declined to disclose specific information about its contents. But he did say the beta includes new features related to Oracle's Real Application Clusters technology, its grid management capabilities, its handling of XML, service-oriented architectures, security and its PL/SQL development language. "There's a lot of exciting functionality," Kaplan said.

Donald Burleson, an Oracle consultant and author in Kittrell, N.C., was less wowed than Kaplan, describing 11g as "a minor move up," with its most salient features likely to be in the area of simplifying database administration. "They're trying to make Oracle so simple a 12-year-old could install it," he said.

Amichai Shulman, chief technology officer at security software vendor Imperva Inc., said Oracle needs to clean up "rotten code" that was left over in 10g from older versions and is responsible for many of the security holes discovered in Oracle's databases this year.

– ERIC LAI

Remember when technology had the ability to amaze you?

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Ultimately, well-managed IT gives you the visibility and control you need to manage risk, manage costs, improve service and align IT investments. To learn more about how CA and our wide array of partners can help you unify and simplify your IT management, visit **ca.com/unify**.

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GLOBAL DISPATCHES

An International IT News Digest

Vista to Ship on Time in Europe, Microsoft Says

BRUSSELS

MICROSOFT CORP. has agreed to make changes to Windows Vista to satisfy European regulators and said it will ship the new operating system on schedule.

The company had warned last summer in a filing with the U.S. Securities and Exchange Commission that "uncertainties" surrounding regulatory battles in Europe "could delay release dates for Windows" there.

Microsoft CEO Steve Ballmer confirmed in a mid-October conversation with European Commission Competition Commissioner Neelie Kroes that Vista will ship on schedule. It will go on sale to large computer manufacturers next month and to consumers in January, Microsoft said.

In a statement, Microsoft said it has made changes to Vista that address the concerns of the European Commission. "We are committed to adhering to local law in every region," Ballmer said.

In September, Microsoft had accused the EC of not providing clear guidance on whether Vista would pass muster under European antitrust law.

■ PETER SAYER, IDG NEWS SERVICE

GLOBAL FACT

5.6M

Projected number of business subscribers for Fixed Mobile Convergence systems in China by 2010, up from 400,000 in 2005.

SOURCE: IN STAT, SCOTTS VALLEY, CALIF.

Siemens Overhauls IT Service Operation

MUNICH

SIEMENS AG has decided to keep but completely overhaul its money-losing IT services and software operations.

Siemens said a new entity, Siemens IT Solutions and Services, will replace the current Siemens Business Services (SBS) operation in January.

The group will oversee all of the company's worldwide IT services and software activities, including four software development operations: Program and System Engineering, Siemens Information Systems, Development Innovation and Projects, and the Business Innovation Center.

Christoph Kollatz, group president of SBS, will be president of the new venture and will have a mandate to slash costs by €1.5 billion ($1.9 billion U.S.) by mid-2007.

The unit is expected to generate annual sales of around €5 billion ($6.3 billion U.S.) and employ about 43,000 workers.

■ JOHN BLAU, IDG NEWS SERVICE

EU Launches Telecom Infringement Cases

BRUSSELS

THE EUROPEAN COMMISSION this month initiated nine new infringement cases against European Union governments for failing to honor telecommunications laws.

The EC also opened second-stage infringement proceedings against eight countries and said that nine ongoing cases have been closed.

Most of the cases were filed against countries that had failed to complete work on assessing the status of competition in their national markets and did not have telecommunications infrastructures capable of providing caller location data to emergency personnel.

"The commission remains vigilant in ensuring that the EU's regulatory framework for electronic communications is correctly implemented," said Viviane Reding, commissioner of the Information Society and Media Directorate General. She added that "the single European emergency number 112 needs to be urgently addressed in all member states."

■ PAUL MELLER, IDG NEWS SERVICE

Wipro Chief Downplays Indian Staff Shortages

BANGALORE, INDIA

WIPRO LTD. Chairman Azim Premji last week downplayed the impact of technical staff shortages in India, saying they won't hold back the country's outsourcing industry.

Indian outsourcers are overcoming the shortage by hiring science graduates and retraining them for engineering work, Premji said.

Last December, McKinsey & Co. in New York and the National Association of Software and Service Companies in New Delhi forecast a shortage of 500,000 engineering workers for India's outsourcing industry by 2010. Premji contends that much of the outsourcing work currently done by engineers is suited to science graduates.

Wipro and competitors Infosys Technologies Ltd. in Bangalore and Tata Consultancy Services Ltd. in Mumbai are also expanding in China and Eastern Europe to supplement their Indian staffs.

The shortages emerged as multinational services companies such as Electronic Data Systems Corp., Accenture Ltd. and IBM set up operations in India to take advantage of low labor costs.

As jobs opened up at those companies, Bangalore-based Wipro's attrition rate started to grow, reaching 15.9% in the quarter that ended Sept. 30. Sudip Banerjee, president for enterprise solutions in Wipro's technologies division, said that the attrition is mostly in entry-level jobs and that it doesn't concern the company.

■ JOHN RIBEIRO, IDG NEWS SERVICE

EU Parliament to Fight Airline Passenger Pact

BRUSSELS

SOME MEMBERS of the European Parliament are gearing up for a fight over data privacy following a temporary agreement by EU justice ministers to provide airline passenger data to U.S. authorities.

Many members of parliament criticized the deal signed earlier this month, which grants U.S. government agencies greater access to passenger records than did an earlier agreement that was deemed illegal by the European Court of Justice in May.

"The European Union has completely capitulated to U.S. demands on this issue," said European Parliament member Sylvia Kaufmann, who is part of the European United Left/Nordic Green Left alliance.

"The fact that the CIA will have access to passenger data is the real scandal, especially when one considers that the right of redress held by U.S. citizens is not extended to EU citizens," she added.

The Court of Justice ruled in May that the old agreement would become void at the end of September. The new temporary agreement is valid until July 2007 and will have to be replaced by a longer-term agreement.

■ PAUL MELLER, IDG NEWS SERVICE

Compiled by Mike Bucken.

Briefly Noted

NEC Corp. in Tokyo has sold its Packard Bell BV unit to companies controlled by John Hui, the former owner of eMachines Inc., for an undisclosed sum. Packard Bell, which sells PCs and other consumer electronics products in Europe, the Middle East, Africa and South America, had revenue of €1.3 billion ($1.6 billion U.S.) in the year that ended in March 2006, NEC said.

■ MARTYN WILLIAMS, IDG NEWS SERVICE

Nokia Corp. completed its acquisition of Gate5 AG, a navigation software maker, earlier this month, just days after licensing hundreds of navigation patents from Trimble Navigation Ltd. Gate5 will become part of Nokia's multimedia business group and will still be based in Berlin. The move is part of Espoo, Finland-based Nokia's strategy to control new technologies that can be integrated into mobile phones.

■ NANCY GOHRING, IDG NEWS SERVICE

Mitsubishi Electric Corp. said its U.S. unit, Mitsubishi Electric & Electronics U.S.A. Inc. in Cypress, Calif., has received a subpoena from the U.S. Department of Justice to produce information regarding sales of static RAM chips. The Tokyo-based parent company acknowledged receipt of the subpoena but declined further comment last week.

■ MARTYN WILLIAMS, IDG NEWS SERVICE

Evesham Technology Ltd. and Tranquil PC Ltd. have built computers that use Taipei-based Via Technologies Inc.'s C-7D processor, which promises to reduce the environmental impact of PCs. Evesham, England-based Evesham's Crusader Carbon 3 PC has a C-7D processor and 256MB of memory. Details of Carrington, England-based Tranquil's C7-D system weren't available at press time.

■ SUMNER LEMON, IDG NEWS SERVICE

Ingres Corp. has opened an operation in New Delhi, continuing an effort to expand around the world. Ingres last week named Vivek Bhatnagar director of business development and global alliances. Bhatnagar is responsible for increasing Ingres' business in India.

■ CHINA MARTENS, IDG NEWS SERVICE

How the Doughboy graces millions of dinner tables. Always in a timely fashion.

Each day, Pillsbury products and other General Mills brands appear in millions of shopping carts around the world. HP Integrity servers with Intel® Itanium® 2 processors help keep distribution and inventory control systems running smoothly. "With their continuous performance and support, we are able to ensure that customer orders and shipments are processed quickly and accurately," said Vandy Johnson, Director of I.S. Operations. "And that's a comforting thought." itanium-integrity.com

ITANIUM + INTEGRITY. ON AND ON AND ON.

intel

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Electric Grid Operator Consolidates BI Tools

Replaces Business Objects, Microsoft reporting tools with Actuate products

BY HEATHER HAVENSTEIN

THE COMPANY that coordinates the buying and selling of wholesale electricity for 80% of California is standardizing on new business intelligence tools as part of a major corporate technology upgrade.

Over the past year, the California Independent System Operator (ISO) has been replacing Excel spreadsheets and reporting tools from Business Objects SA and Microsoft Corp. with query, reporting and analysis tools from San Francisco-based Actuate Corp., said Steve Berberich, CIO and vice president of technology at the electric grid operator.

The BI initiative is running in tandem with a project to upgrade the specialized core IT systems that provide the ISO's internal users with electricity demand data, prices and the ability to settle transactions, Berberich said.

The project is slated to be completed in November 2007.

The ISO manages the flow of electricity along California's wholesale power grid, coordinating 40,000 transactions every hour between buyers and sellers. The not-for-profit electric grid operator's IT systems are also used to manage demand forecasts, track prices and settle transactions.

"The data that we provide and how we provide it actually facilitates the market," Berberich said. "We're very demanding in what we use. Because of the role we play, it was important to have a bullet-proof product and one . . . we knew could integrate with our new applications."

The ISO will use the Actuate tools to marry historical data with real-time information so users can have online access to reports containing scheduled energy loads and forecasts. As a result, energy companies will be able to more easily access online information to better plan for production and establish pricing, Berberich said.

He said the upgrade is an opportunity for the grid operator to eliminate some of the costs associated with maintaining separate BI tools. He added, though, that it would be difficult to estimate the exact cost savings associated with standardizing on BI tools.

"We are creating value on a number of fronts," Berberich said. "First, we have reduced support costs because we don't have so many disparate reporting tools. Training costs are reduced because we don't have to train on a collection of tools."

Berberich also said workers will be more efficient because they won't have to use separate tools for different tasks.

While he acknowledged that it's generally difficult to get BI users to change tools, the ISO has so far been successful in its effort by clearly laying out the advantages of the new products. Officials have worked to create a "bit of excitement around the new product" that may make it more attractive to users than the tools now in use, Berberich said.

GETTY IMAGES

The California ISO, which manages the flow of electricity along the state's wholesale power grid, is upgrading its BI and core IT systems.

"You have to be firm in your position on the standard," he added. "What is important to us is that we focus on providing information. To the extent we have a tool that can change data into information . . . that is very useful."

Bill Hostmann, an analyst at Gartner Inc., said companies must find ways to reduce costs when building an infrastructure that can be used to link historical and real-time data.

A BI infrastructure for analyzing real-time data is much more expensive and complex than those focused only on historical data, Hostmann said. Eliminating the overlap or redundant features found in multiple tools can help offset those costs, he said. ▸

New CEO Outlines Plans for Struggling Extreme

BY MATT HAMBLEN

Former Sun Microsystems Inc. executive **Mark Canepa** *was named president and CEO of Extreme Networks Inc. on Aug. 30. Since then, the company has received notice that it may be delisted from the Nasdaq Stock Market for delaying its year-end financial filings, and it has appointed a committee to investigate its stock-option grant practices. In an interview with* Computerworld, *Canepa talked about those issues, the company's declining revenue and the growing threat of Cisco Systems Inc., which dominates the switching and routing markets for large companies and telecommunications service providers.*

What are customers asking about Extreme's financial performance? Customers want a really good high-quality product at a reasonable price. They also want a sales force and a service organization that's there when they need them. The third thing they [want] is a company that will be around for a long time that they can count on to do business with. I think we've been able to convince customers we have all three.

How are customers reacting to the possible Nasdaq delisting, and to an inquiry into Extreme's stock-options practices? We have talked to lots of customers. First, we've got lots of company. Hundreds of technology companies are facing [investigations into stock-options practices], and there will be lots more. [The investigation] is just a thing. It doesn't affect the equipment; it doesn't affect anything, really, in the company. It's not clear there's going to be a restatement of the annual report. There is only a delay in the filing of the Extreme 10-K.

I spend very little time worrying about it. We'll see what the outcome is, if any. That's what we've been telling customers, and that's what we've been telling the sales force.

How important are enterprise customers to Extreme, compared with telecom carriers? Most of our revenue comes from the enterprise space, so it is a hugely important customer. The carriers have leading-edge requirements. The carrier innovations carry over to the enterprise world. Extreme has a fraction of its business from the carrier space, but we carry that over. We're good at bringing it to the enterprise, with the right cost structure.

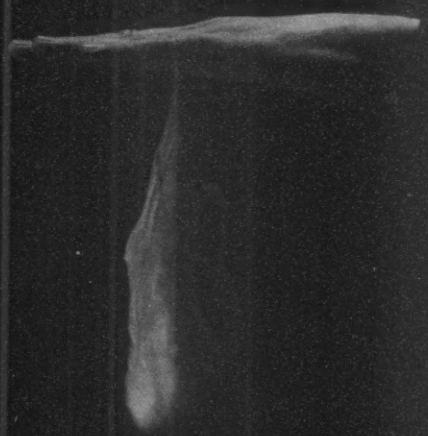
What is Extreme's technology direction? Our technology direction is pretty simple. You have got to understand the network very well. That means being able to get at the heart of those IP packets and understand the flow that's coming to them. That requires pretty sophisticated hardware and software, which the company is built upon. Then it requires building products able to exploit that and knowing what markets are receptive to those features.

Am I correct in concluding that Extreme won't be making any major strategic changes soon? At a strategic level, I don't think a lot will change. The next year or so for the company is all about operation and focus and making sure people are in the right segment and making sure all the technology in the products is transferred into the knowledge base of the sales force. It's all about partner organizations, solutions and all of that.

Can you assess the competitive landscape, including Cisco? We all operate in the shadow of a Cisco. It means you have to differentiate and be nimble. Cisco may be large, but they have lots of different product lines that may be incompatible with one another. We've built our company around a single system that's open. We have a very sophisticated XML interface and a set of APIs that make it very easy for a partner like Avaya to closely build in an application environment. That's key when you're a $400 million company like us. The trick is to apply what you are really good at into markets where you can make a difference, and get there before Cisco. ▸

80% OF APPLICATIONS ARE DEPLOYED UNTESTED.[1]

100% OF CUSTOMERS REALLY HATE THAT.



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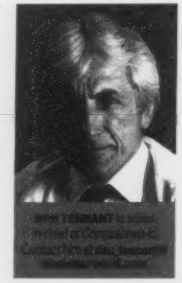
DON TENNANT

Out of Control

THERE'S a lot of buzz about Hewlett-Packard being in damage-control mode as it struggles to cope with the fallout from the boardroom leak investigation fiasco. While the buzz is getting a little tiresome, it begs a nagging question that I can't seem to shake: Why is HP so stupefyingly bad at controlling the damage?



Here we have a company that's desperate to retain (or regain) its users' confidence following one of the highest-profile corporate ethics breaches in recent memory. It was essential to fill the newly vacated chief ethics officer post, and quickly, so that someone would be in place to ensure that HP adheres to its standards of business conduct. But in a demonstration of astonishingly poor judgment, the post was filled by one of HP CEO Mark Hurd's old cronies from NCR.

It has been almost two weeks since HP announced that Jon Hoak, a former general counsel at NCR (the company Hurd left to join HP in 2005), was being tapped for the chief ethics officer post. Yet HP's cluelessness remains a mystery.

Of all the candidates who would be eminently qualified to assume a role that would clearly require objectivity, impartiality and a degree of distance from the individuals whose names are inextricably linked to the scandal, why on earth select Hoak?

"Obviously, Mark wanted to make a hire quickly," HP spokeswoman Emma Wischhusen told Reuters, according to a report by that news organization. "The fact that they had worked together for more than 10 years greatly shortened the hiring process."

Yes, I'm sure it did. When North Korea's Kim Il Sung appointed his son, Kim Jong Il, to take over for him, that greatly shortened the transfer-of-power process. Expediency has its merits, but let's not elevate it to a status it doesn't deserve.

It seems incomprehensible that no one at HP could foresee that appointing a former Hurd colleague to the ethics oversight position might be perceived as a shameless attempt by Hurd to keep from being further sullied by the scandal. But there's another dimension to all this that's even more baffling.

Nearly two weeks before HP announced Hoak's appointment, *BusinessWeek* ran a story that recounted how Hurd had to deal with a number of internal investigations at NCR, including probes of leaks of sensitive information on Yahoo message boards.

"In each investigation, Hurd . . . relied on his former chief counsel, Jon Hoak, to run the show," *BusinessWeek* reported. "Hoak . . . vividly recalls Hurd's peering over his rimless reading glasses after one Yahoo leak and telling him: 'We can't have this, so you go out and do what you have to do. Just make sure everything is legal and above board.' "

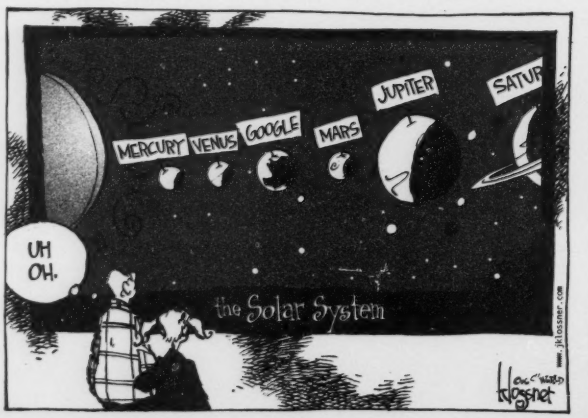
So Hoak wasn't just any former colleague. He reportedly was Hurd's go-to guy when the boss wanted internal leaks investigated at NCR.

Think about that. Hurd is CEO of a company that's embroiled in a leak-probe scandal that has resulted in the criminal indictments of its former chairman, Patricia Dunn, and its former chief ethics officer, Kevin Hunsaker. Hurd himself has been called to testify before Congress about his role in the scandal, which is still under scrutiny by legal authorities.

Now, not only has Hurd taken over as chairman, but he has also appointed an old leak-investigation cohort to replace Hunsaker. No, there's nothing inherently wrong or unethical about that. And there's absolutely no reason to believe Hoak ever conducted any investigation under any but the most ethical of circumstances.

But Hurd's appointment of Hoak still smacks of cronyism and self-preservation. And that just creates more damage for HP to have to control.

Don Tennant



THORNTON A. MAY

Be an FDR of IT Leadership

A WEEK after his election as president in 1932, Franklin Delano Roosevelt gave an interview to *The New York Times*. In it, he reviewed the work of great presidents and concluded that they were all "leaders of thought at times when certain historic ideas in the life of the nation had to be clarified." Currently, executives' and society's ideas about the role, purpose, commitments and responsibilities of IT need to be clarified. And we in IT must be the thought leaders who step up and provide the necessary clarity.

Here are three steps to prepare you to do this.

Step 1: Celebrate new thoughts and new thinkers.

We work in the fastest-changing sector of the economy, yet many IT executives somehow come across to peers as stale, tired, intellectually bankrupt and operationally out of gas. Ask someone in IT "What's new?" and he most likely won't have a very exciting response. How can this be?

Another U.S. president, Grover Cleveland, built his political base by holding forth in saloons, speaking clearly in simple words to immigrants. He became a pipeline to the knowledge that they wanted and an aid to their Americanization. Truth be told, we are all immigrants in a new land — the land of digital. We in IT can be a pipeline of knowledge and ideas to executives coming to grips with the wholesale digitization going on in the economy today.

But if most ideas come into your company from the outside, you need to do more creative thinking of your own. Be selective about ideas, but don't be afraid to let in big new ones. Remem-

ber that there is such a thing as new IT knowledge. Executives are searching for a road map. Let's give it to them.

Step 2: Weed out old thoughts and old thinkers.

A difficult but necessary step on the IT professional's path to true thought leadership is to inventory all strongly held beliefs — the truths about IT that are held to be self-evident — and then assess candidly whether they are indeed self-evident. Woodrow Wilson in 1912 wrote, "We are in the presence of a new organization of society. . . . The old formulas do not fit the present problems; they read like documents taken out of a forgotten age." We need to jettison old formulas that no longer serve, and repurpose or remove the people who cling to them.

Every vertical market needs a mental spring cleaning from time to time. I wrote last month about the need for IT folks in health care to get out and mingle with non-health-care professionals ("Where Are All the Health Care IT Pros?" Sept. 25). Meanwhile, in too many government environments, public servants continue to perpetuate an assembly-line mode of operation in a build-to-suit world.

Step 3: Have a compelling endpoint and work toward it.

You need to make the invisible (that which does not yet exist) visible. Great organizations are bringing those whose impulse is toward visionary change and those who are interested in making things work into close contact with one another.

Herbert Hoover, one of the brightest and best-intentioned people ever to go into public service, was described by a friend, the eminent Kansas journalist William Allen White, as "the greatest innocent bystander in history." Don't be a Hoover. Be an FDR!

JOHN D. HALAMKA

In the Data Center, the Heat Is On

I RECENTLY BEGAN a project to consolidate two data centers. Moore's Law has been kind, enabling Harvard Medical School to do more work with less data-center real estate. We had enough rack space, network drops and power connections, so the consolidation seemed like a great way to reduce operating costs.

All looked good until we examined the power and cooling requirements of our computing clusters and new racks of blade servers. For a mere $400,000, we could run new power wiring from electrical crypts to the data center. But the backup generators wouldn't be able to sustain the consolidated data center in a total power loss situation, so we would need to install a new $1 million backup generator. Problem solved?

JOHN D. HALAMKA is CIO at CareGroup Healthcare System, CIO and associate dean for educational technology at Harvard Medical School, chairman of the New England Health Electronic Data Interchange Network, CIO of the Harvard Clinical Research Institute and a practicing emergency physician. Contact him at jhalamka@caregroup.harvard.edu.

Not quite. The heat generated by all this power consumption would rapidly exhaust the cooling system, driving temperatures up 10 degrees. We investigated floor-tile-mounted cooling, portable cooling units and even rack-mounted cooling systems. They all take up space, consume power and add weight. In the end, we found that the new data center's cost per square foot would exceed the cost of operating two less densely packed data centers. We looked at commercial data-hosting options and ran into the same issue. Power limits per rack meant half-full racks and twice as much square footage to lease, increasing our operating costs.

At my CareGroup data center, we recently completed a long-term planning exercise for our unused square footage. Over the past few years, we've met increasing customer demand by adding servers, and power has not been a limiting factor. However, as we retire mainframe, mini- and RISC computing technologies and replace them with Intel- or AMD-based blades, the heat generated will exceed our cooling capacity long before real estate and power have been exhausted.

The recent rise in the cost of energy has also demonstrated that unchecked growth in the number of servers is not economically sustainable. In general, IT organizations have a tendency to add capacity rather than take on the more difficult task of controlling demand, contributing to growth in power consumption.

As a corollary to Moore's Law and a tribute to the Hawaiian god of fire, I propose Pele's Law. Power consumption and heat will increase to the point where data centers cannot sustain the number of servers that the real estate can accommodate.

The solution is to deploy servers more strategically. We've started a "Kill-a-watt" program at CareGroup and are now balancing our efforts between supply and demand. We are more conservative about adding dedicated servers for every new application and more likely to challenge vendor requirements when dedicated servers are requested, examine the efficiency of power supplies and perform energy-efficiency checks on the mechanical and electrical systems supporting the data center.

We have also begun to extensively use VMware, Xen and other virtualization techniques. This means we can host farms of Intel and AMD blades running Windows or Linux, deploying CPU capacity on demand without adding hardware. We're connecting two geographically distant data centers using low-cost dark fiber and building "clouds" of server capacity. We create, move and load-balance virtual servers without interrupting applications.

Managing a data center is no longer simply a facilities or real estate task. We've hired a full-time power engineer to manage the life cycle of our data center, network closets and disaster recovery facilities. New blade technologies, Linux clusters and virtualization are great for on-demand computing, but power and cooling are the new infrastructure challenge of the CIO.

WANT OUR OPINION?

More columnists and links to archives of previous columns are on our Web site: **www.computerworld.com/columns**

READERS' LETTERS

Stressing the Point

IN THE article "IT Execs Have to Target Stress, CIO Says" [News, Aug. 21], William Cross was quoted as saying, "One of the big reasons [IT is a stressful occupation] is we work very closely with computing equipment that in today's world doesn't fail. That's high-stress because if there are errors, they are probably ours."

It is apparent that Cross hasn't spent much time actually working with technology, or hasn't had an open and honest discussion with his staff. How many times do we work with software or hardware that simply fails to deliver? How often do technicians have to spend hours applying hot fix after hot fix to fix a problem that the vendor never wanted to admit existed? How many times does a project get dumped on a technician with an unrealistic time frame for completion and no time for adequate testing? The answer to these questions is the same: very frequently.

I have worked with individuals like Cross, and about the only thing you can do when someone doesn't live in the real world is find another position. Hopefully, your new boss won't have his head in the sand.

Alan James
Network administrator, Houston

YOUR ARTICLE totally missed the mark. Stress is generated by poor leadership and the side effects it creates (i.e., measuring keystrokes instead of results). Most people, if managed and led properly, are energized by the problem-solving, late-night pages and daily challenges of being in IT. Having a bad leader with no vision, common sense or communication skills causes stress.

Bruce MacDonald
IT architect, Scottsdale, Ariz.

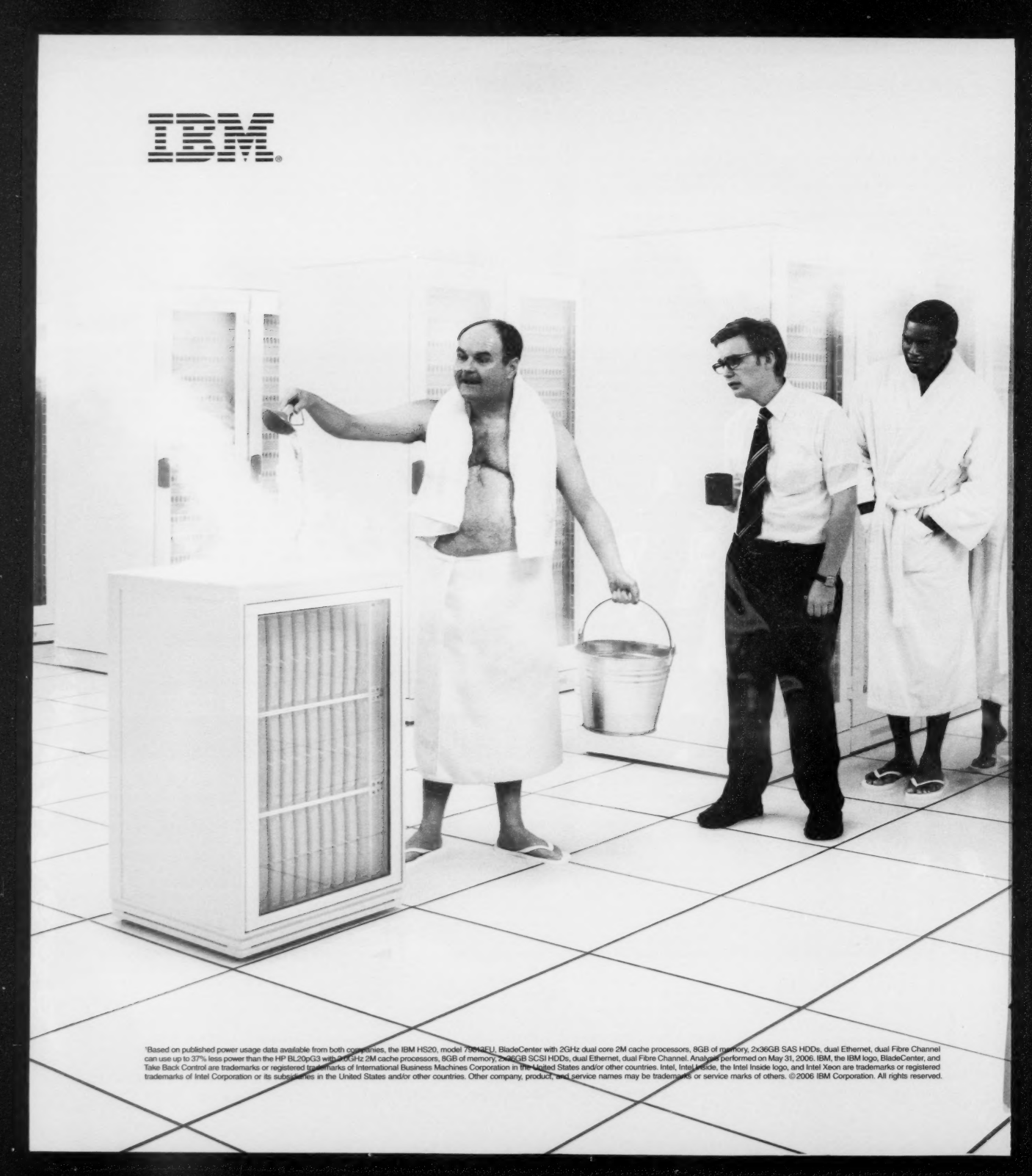
It Shouldn't Be IT Vs. Everyone Else

I COULDN'T AGREE more with Bruce A. Stewart's article "Think About Messages You Send" [Opinions, Aug. 14]. As an IT director at a national company, I find that sometimes users can be overwhelmed by technical data that's useless to them. A newsletter is a good way to communicate with these users, but Stewart is right that you have to take the time to "de-IT-ize" it.

The more IT can relate to the people it supports, the more it will be accepted into the organization and seen as part of the team. In some organizations, I sense an atmosphere of IT vs. the rest of the group. You have to educate people on what the IT department is doing and talk to users as people.

Darrin P. Brillhart
Director of IT, MMC Corp., Overland Park, Kan., dbrillhart@mmccorps.com

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.



*Based on published power usage data available from both companies, the IBM HS20, model 7981J2U, BladeCenter with 2GHz dual core 2M cache processors, 8GB of memory, 2x36GB SAS HDDs, dual Ethernet, dual Fibre Channel can use up to 37% less power than the HP BL20pG3 with 3.0GHz 2M cache processors, 8GB of memory, 2x36GB SCSI HDDs, dual Ethernet, dual Fibre Channel. Analysis performed on May 31, 2006. IBM, the IBM logo, BladeCenter, and Take Back Control are trademarks or registered trademarks of International Business Machines Corporation in the United States and/or other countries. Intel, Intel Inside, the Intel Inside logo, and Intel Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and/or other countries. Other company, product, and service names may be trademarks or service marks of others. ©2006 IBM Corporation. All rights reserved.

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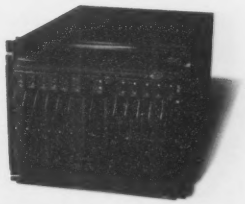
_INFRASTRUCTURE LOG

_DAY 16: These servers are so hot, we're running the A.C. at full blast, and the thermometer is still pushing 140°. Had to relax the dress code in the server room. No choice. It's towels and flip-flops until we get this heat problem under control.

_Gil says he's lost a lot of weight. I hadn't noticed.

_DAY 17: I found a cooler answer to our heat problem: the IBM BladeCenter® with Intel® Xeon® Processors reduces the overall amount of power required by the system. The BladeCenter is designed to respond automatically to power events and can use up to 37% less energy[1]. Less power. Less heat. Less money. Less stress.

_Oh, apparently HR had a problem with the dress code but couldn't call and tell us, since the phones had melted.



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Q&A
BI at Age 17
Howard Dresner, who coined the term "business intelligence" in 1989, evaluates 17 years of BI and looks at its future. **PAGE 36**

SECURITY MANAGER'S JOURNAL
Enterprise DRM Back to the Fore
Mathias Thurman had lost funding for his effort to protect intellectual property, but the CIO now puts it back on the table. **PAGE 34**

OPINION
The E-voting Blame Game
Robert L. Mitchell says electronic voting technology has turned into a convenient scapegoat for all that goes wrong at the polls. **PAGE 38**

The Virtual PROCRASTINATOR

Despite the technology's promise, most businesses have yet to deploy virtual servers. Here's why.

BY ROBERT L. MITCHELL

AT PERKINELMER INC., server virtualization is a new data center standard. In less than two years, the life sciences company has gone from experimenting with VMware ESX Server on a few machines in its development group to deploying 230 virtual server instances in its Boston data center. "Our journey has been a pretty smooth one," says CIO Matt Dattilo. But even as the Wellesley, Mass.-based company prepares to deploy the technology in its five largest data centers, most of Dattilo's peers are still kicking the tires.

In *Computerworld*'s latest quarterly Vital Signs survey, 51% of the 314 IT managers polled said they have no plans to use server virtualization. Fewer than one in five said they're testing the technology, and just one quarter use it for production servers. A mere 4% said they have followed PerkinElmer's example and made virtual machines a default server technology standard for many data center applications. "Most companies are still working with it in smaller areas, consolidating a few servers," says Gartner Inc. analyst Martin Reynolds.

The technology is maturing rapidly, but most organizations are just starting to climb the adoption curve. IT executives recite a litany of reasons why they're hesitant to move forward. Obstacles include the need to train administrators, cost, the lack of vendor competition, and concerns about the availability and quality of management tools. They also worry that software vendors won't support applications running on virtual machines.

EMERGING TECH

What new technologies hold the most promise for your company?

1	Virtualization
2	Mobile/wireless (e.g., 3G)
3	Server blades

Base: 314 IT managers

SOURCE: COMPUTERWORLD VITAL SIGNS ONLINE SURVEY, AUGUST 2006

The survey shows that the reasons for considering virtualization differ depending on the size of the organization. While more than half of large companies cite consolidation as their primary reason for adopting server virtualization, companies with fewer than 500 employees are most interested in ease of deployment and manageability. And some smaller companies are looking at virtualization to solve business continuity challenges.

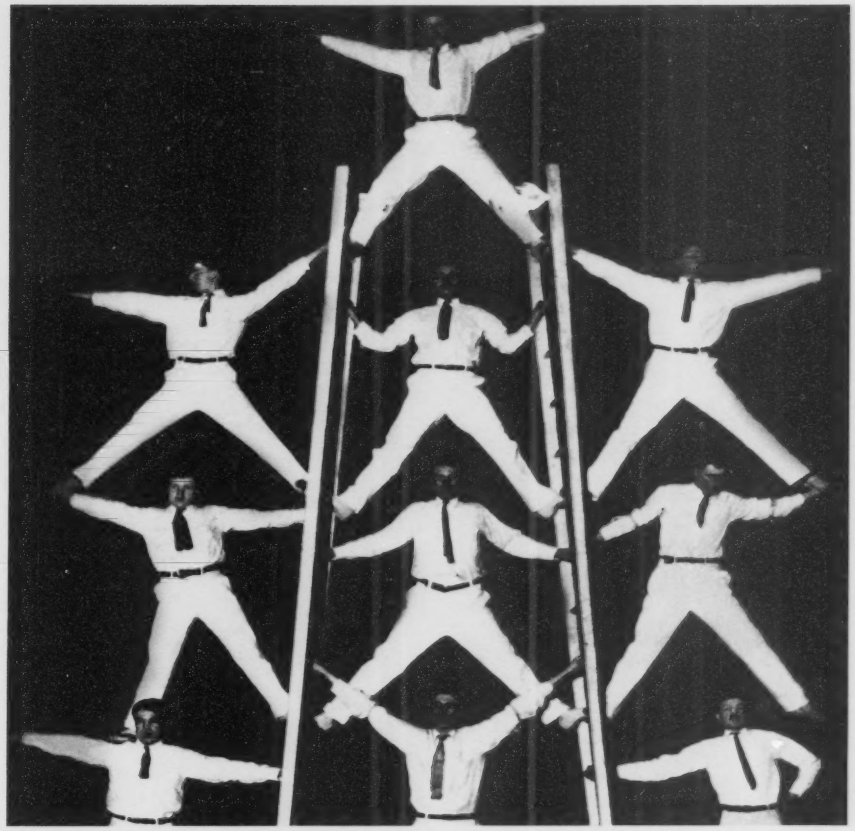
Rod Payton, IT director at Bethesda, Md.-based Case Design/Remodeling Inc., says disaster recovery makes the business case for virtualization. He has been testing Microsoft Corp.'s Virtual Server and VMware Inc.'s VMware ESX Server, and he plans to roll out ESX Server later this fall. "Cost savings isn't our primary motivation," Payton says. With the abil-

Continued on page 30

KATHLEEN DOOHER

MATT DATTILO, CIO at PerkinElmer, says his server virtualization effort has been "pretty smooth." But many other IT shops are still holding back.

Innovations by **InterSystems**



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Continued from page 26

ity to move virtual machines, "we can fail over in real time or in a very short time," he says. "We'll be able to implement disaster recovery that we don't even have today." But he's also cautious and plans to roll out virtualization gradually over six months. "I'm not going to put myself in a corner based on something a vendor says. I want to see it work," Payton explains.

VMware is the dominant vendor, with 55% of the virtual machine market, according to IDC. Microsoft currently offers Virtual Server 2005, which runs on top of Windows, but it plans to incorporate a more powerful "hypervisor" virtualization layer in the upcoming Longhorn release of Windows Server. That version, which won't require a host operating system, will more directly compete with VMware's ESX Server.

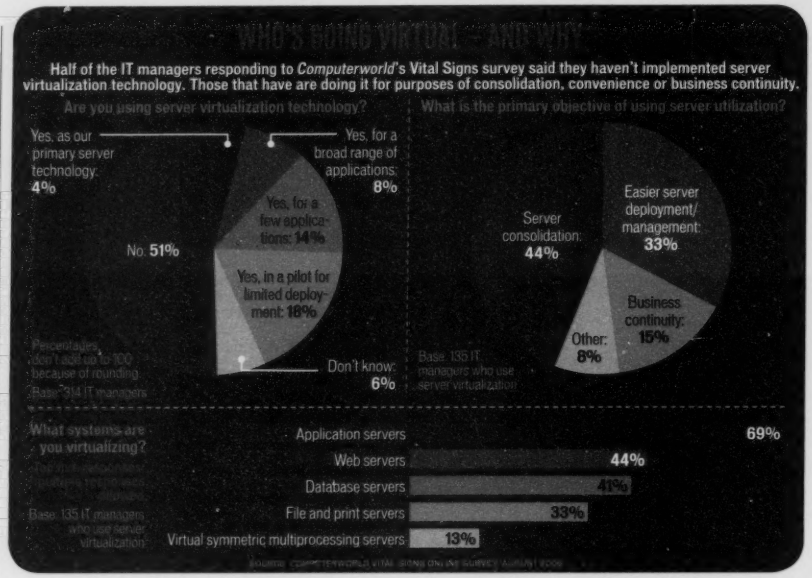
In the Linux realm, the Xen hypervisor within the popular Linux distributions from Red Hat Inc. and SUSE Linux AG will soon provide another alternative. Anticipation of those changes may also be keeping some people on the sidelines.

"There's confusion over where things are going," says Reynolds. "Do I invest in VMware now, whereas if I wait another 18 months, I can have Microsoft virtualization that could be a whole lot less expensive and work with my Windows servers better?"

Fear Factor

Shahri Moin, IT director at Oscient Pharmaceuticals Corp. in Waltham, Mass., is testing Microsoft Virtual Server 2005. So far, so good, he says, but Moin has reservations about upsetting the status quo. "Putting it in production scares the daylights out of me," he acknowledges. And since he has just a few dozen servers to manage, the most common motivation for adopting virtualization — consolidation — isn't a big concern. "It's not going to allow me in a meaningful way to reduce staff or operating costs," Moin says.

PerkinElmer first started using virtual machines in 2005 in a project designed to address space, power and cooling problems in its Boston data center by consolidating physical servers. Jeff Brittain, IT director for the city of Hickory, N.C., found another way to achieve a similar goal. He tested Microsoft Virtual Server 2005 but decided to migrate 40 rack-mounted servers to IBM blade servers instead. "That is accomplishing the consolidation we were looking at," he says. With no pressing reason to go ahead with Virtual Server, he says he'll revisit the technology "down the road."


WHO'S GOING VIRTUAL — AND WHY
Half of the IT managers responding to Computerworld's Vital Signs survey said they haven't implemented server virtualization technology. Those that have are doing it for purposes of consolidation, convenience or business continuity.
Are you using server virtualization technology?
Yes, as our primary server technology: 4%
Yes, for a broad range of applications: 8%
Yes, for a few applications: 14%
No: 51%
Yes, in a pilot for limited deployment: 18%
Don't know: 6%
Percentages don't add up to 100 because of rounding.
Base: 314 IT managers
What is the primary objective of using server utilization?
Server consolidation: 44%
Easier server deployment/management: 33%
Business continuity: 15%
Other: 8%
Base: 135 IT managers who use server virtualization
What systems are you virtualizing?
Application servers 69%
Web servers 44%
Database servers 41%
File and print servers 33%
Virtual symmetric multiprocessing servers 13%
Base: 135 IT managers who use server virtualization
SOURCE: COMPUTERWORLD VITAL SIGNS ONLINE SURVEY, AUGUST 2006

John Nordin, CIO at Insurance Auto Auctions Inc. in Westchester, Ill., has been testing VMware, but he says he doesn't trust the technology enough to use it on the 130 servers that run the company's auction business. During an auction, a car is sold every 40 seconds, and many bids come in electronically. With 750,000 auctions a year, Nordin says he can't afford problems. "This is super-mission-critical stuff. When it isn't there, we can see it on the bottom line," he says.

In early testing of VMware, a virtual server inexplicably reverted back to a prior configuration. That corrupted the system, which had to be restored from tape. Nordin says explanations from his vendors, VMware and Microsoft, haven't been forthcoming. "I got a lot of the classic multivendor finger-pointing," he says. "Nobody has been able to give me a root cause, and this thing is never seeing production until I know why this happened." Even if those answers come, Nordin says, he'll start out slowly by using the technology only on his print servers.

Bob Holstein, CIO at National Public Radio Inc., isn't worried about the reliability of VMware ESX Server, which he calls "rock-solid and production-worthy." He's testing the product now and plans to do a small rollout on production servers later this year. If all goes according to plan, application servers with low utilization rates will be consolidated and then moved to a collocation facility to make room for more servers that handle live digital audio feeds for NPR's radio programs. Those servers will stay on physical hardware, however. "Those [application] vendors are not going to support a virtual environment, and they're too mission-critical to take that risk," Holstein says.

"I have a 'show me' attitude about [VMware] right

Continued on page 32

Virtual Competitors

While VMware holds the lion's share of the server virtualization market, several competing products are available – or are in the works. Here's how a few of the key players stack up.

■ VIRTUAL SERVER 2005

Unlike VMware's ESX Server, which runs directly on the system hardware, Microsoft Virtual Server 2005 R2 runs virtual machines, or guest operating systems, on top of another instance of Windows. Architecturally, Virtual Server is similar to VMware Server (formerly GSX Server). Both products are free. Virtual Server 2005 R2 SP2, which is currently in beta, supports hardware-assisted virtualization in the latest processors from Advanced Micro Devices Inc. and Intel Corp. Volume Shadow Copy Service has been enhanced so that a physical server and all apps on it can be captured in a single snapshot, rather than requiring individual backups of each guest operating system.

■ WINDOWS SERVER LONGHORN

The "hypervisor" software in the Longhorn release of Windows Server will directly compete with ESX Server. Longhorn will ship sometime in 2007, and the virtualization capabilities will roll out about six months later. Jim Ni, Microsoft's group manager for server virtualization, describes the hypervisor as a stripped-down version of Windows. Longhorn will support both Windows and Xen-enabled versions of Linux as virtual servers. While users still have to pay a Windows Server license for the hypervisor, Enterprise Edition users will be able to run guest instance of Windows in up to four virtual machine sessions without additional licensing fees.

■ VMWARE

VMware, a unit of EMC Corp., offers both Virtual Server and ESX Server, part of its VMware Infrastructure suite. VMware has the most advanced tools. The recently released Version 3 added the Consolidated Backup and Distributed Resource Scheduler tools for dynamic load balancing across virtual machines. Another new tool, VMware HA, automatically restarts virtual machines running on one physical server on a backup server in the event of hardware failure.

■ XEN

Both Novell Inc. and Red Hat are including the open-source Xen hypervisor into their Linux distributions. XenSource Inc. has released Xen Enterprise, which supports virtual machines running many Unix and Linux distributions. It will also support Windows virtual machines by year's end, says Simon Crosby, chief technology officer at XenSource. Xen Enterprise can run on a 32-way machine, while VMware can only scale up to a four-processor machine. "We're a little lacking in terms of spit and polish," Crosby acknowledges. But, he adds, "we're about one-tenth the cost."

– ROBERT L. MITCHELL

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Continued from page 30

now," Holstein says, adding that staffers need to get plenty of hands-on experience with the technology before moving to a production environment.

Nordin agrees. "People who haven't worked in any partitioned environment shouldn't underestimate what their system engineers need to learn," he says. "Make sure you put the training dollars in."

"Virtualization is kind of a leap of faith," says Mike French, senior network engineer at PerkinElmer. He has spent time explaining the technology to his peers. "It's a tough thing to break the barrier, but if you build the environment rock-solid with redundancy and safeguards, nobody should ever have a problem."

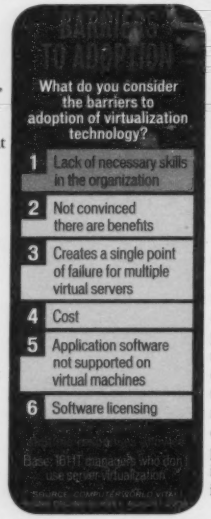
Although the technology has been in use for several years, it's still common to find applications that aren't supported on virtual machines. "A lot of vendors won't certify applications as VMware-compatible," Dattilo says. "In most cases, we assumed the risk, unless it was a mission-critical application."

A VMware spokesman says that the problem has diminished. Indeed, a few of Dattilo's vendors, such as Hyperion Solutions Corp. and Business Objects SA, have begun supporting virtual machines since he started working with the technology. As for the others, Dattilo says that most software vendors' support organizations will still work with his staff on problems, but he hasn't had any so far.

Nordin says the fact that some software vendors still don't support applications on virtual servers is evidence that the market still isn't fully mature.

"Those types of issues have been long resolved in the MVS, VM and Unix space," he says, adding that server virtualization products "need to get going." With Red Hat, SUSE and Microsoft embedding hypervisors into the Linux and Windows operating systems, however, application vendors will have little choice but to support it, analysts say.

Software vendors aren't the only ones who've been slow to support their products running in virtual servers. Jon Elsasser, CIO at The Timken Co. in Canton, Ohio, says IT staff resistance to deploying homegrown applications on virtual machines has stopped some projects. "Some internal application-support personnel are a bit leery of it," Elsasser says, but he expects attitudes to change over time.


BARRIERS TO ADOPTION
What do you consider the barriers to adoption of virtualization technology?
1 Lack of necessary skills in the organization
2 Not convinced there are benefits
3 Creates a single point of failure for multiple virtual servers
4 Cost
5 Application software not supported on virtual machines
6 Software licensing
Base: IT/IT managers who don't use server virtualization

Slow Uptake

Even companies that have embraced virtual server technology have limited its penetration into the data center. Those that have adopted virtualization have, on average, only about 20% of their environment virtualized, according to IDC analyst John Humphreys.

After a pilot last year, Timken went on to virtualize 35% of its servers. It now has 125 virtual servers running on six quad-processor physical machines, but Elsasser has no plans to expand beyond that. The 100 Windows and SQL servers supporting a new SAP ERP software implementation are off-limits to virtualization, he says. "At this point, we're just glad it's running," Elsasser says.

At PerkinElmer, Dattilo's goal is to have 52% of servers virtualized by the time the current project there is completed. That includes application servers with relatively low utilization levels, but others, such as Exchange Server mailbox nodes, are staying put.

Payton plans to roll out virtualization at Case Design/Remodeling this fall. "We'll stay away from Exchange and SQL Server" and focus on low-utilization applications like domain controllers and file- and print-sharing servers, he says. Most users aren't ready to consider virtualization for important applications, says IDC analyst Steven Elliot. "The really mission-critical stuff is further down the line," he says.

Tools for managing virtual machines are still evolving, and their availability is "still a little light," says Dattilo. However, he adds that tools included with the recently introduced VMware Infrastructure 3 Enterprise Edition have solved some of his problems. Currently, every virtual machine on a physical server needs its own instance of Backup Exec. VMware Consolidated Backup eliminates that problem.

Distributing loads across virtual machines — a time-consuming, manual process today — can be automated using Distributed Resource Scheduler. Payton has been testing with the previous version of VMware and says, "We're running into CPU utilization problems because the limit is set statically." He and Dattilo both plan to migrate to the new version.

With VMware so far ahead of the competition, there's little pressure on pricing today. "Software licensing costs are a little high, and their maintenance is out of this world," says Dattilo. Application software licensing on virtual machines is also in flux. "There's a lot of confusion among application vendors as to how those will be licensed," he says, noting he doesn't want to pay a per-processor premium for running on a quad-processor machine when an application is running in a virtual machine and using just a fraction of those resources.

Analysts expect the adoption curve to accelerate this year as users become more comfortable with virtualization technology. Says Elliot, "2006 is the year of production for large enterprises."

But that doesn't mean everyone should rush ahead. "If you don't have a clear benefit from virtualization today, you can wait," says Reynolds. That said, most companies will find at least some immediate benefits, whether from consolidation or reduced server configuration and deployment costs. Elsasser says server procurement time savings made his project worthwhile. "It used to take two weeks to deploy a new server," he says. "Now we can do it in two days, and in an emergency, we can do it in an hour."

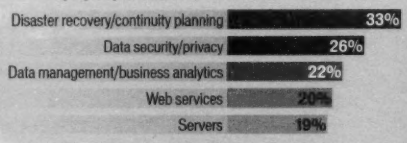
A compromise strategy is to focus on "high-value production deployments" but put off broader implementations, says Reynolds. The next version of Windows Server will offer technology to compete with VMware in 18 months or so, and Linux distributions with virtualization technology will be here even sooner. With those competitive pressures, "VMware could become significantly less expensive," Reynolds says.

Vital Signs

In *Computerworld*'s second quarterly Vital Signs survey, disaster recovery and security were the two leading short-term priorities among the 314 IT managers surveyed. And many respondents said they were moving forward with business intelligence and Web services projects. They also said they're concerned about budget constraints and managing multiple projects.

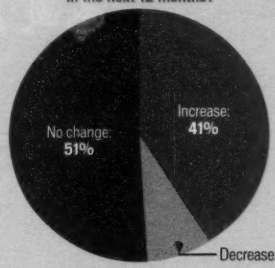
Comprehensive Checkup: For more results of our Vital Signs survey and respondents' demographics, visit **www.computerworld.com**

What will be your company's top three IT project priorities in the next three months?

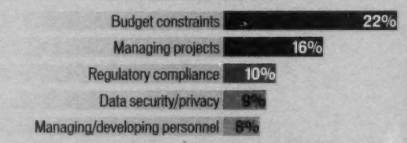


Top five responses; multiple responses allowed.

What changes do you expect in your IT spending in the next 12 months?

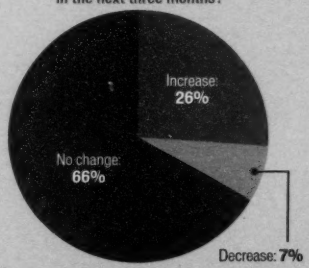


What will be your biggest management challenge in the next three months?



Top five responses; multiple responses allowed.

What changes do you expect in your IT head count in the next three months?



Percentages don't add up to 100 because of rounding.

SOURCE: *COMPUTERWORLD* VITAL SIGNS ONLINE SURVEY, AUGUST 2006

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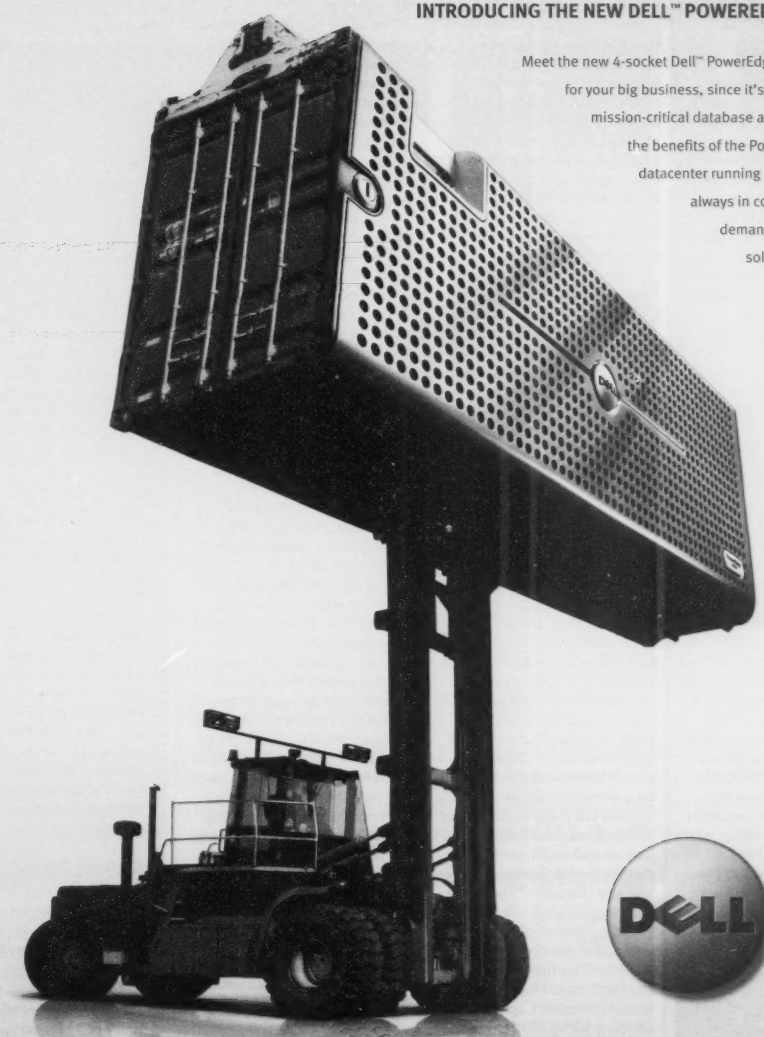

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Enterprise DRM Back to the Fore

Our security manager had lost funding for his effort to protect IP, but the CIO puts it back on the table. By Mathias Thurman

SECURITY MANAGER'S JOURNAL

THE CIO called me into his office recently to show me something. I've learned that when he wants to show me something, I should be prepared to spend some long nights at work. That's what happened this time as well.

What he wanted to show me was related to digital rights management. I have mentioned before that I have tried to deploy enterprise rights management to protect our company's intellectual property. With DRM, one can encrypt a document and then "wrap" it in a digital envelope that applies certain permissions or policies to it. Permissions can be as simple as a list of authorized recipients, and policies can do things like restrict the recipients' ability to copy and paste, save, print or send.

My initial attempt at deploying DRM was not very successful. As the project manager, I had defined most of the requirements, researched vendors and selected a single vendor to conduct a pilot. I had even gone so far as to have a Solaris server configured, and all that was left to do was to obtain the rights management server software. But then funding for the project was "deferred." That was just a nice way of telling me it had been cut.

I still haven't seen any funding. When I was hired here, I was told that protecting intellectual property was a priority, so you would expect executives to be excited about deploying DRM. It's quite funny, actually, when I think about the countless hours I've spent researching and conducting project management meetings for various initiatives that have never received funding. I don't mind doing the work; I always learn something, since most initiatives involve either new and emerging technologies or something I've deployed in the past but need a refresher on.

As the manager, though, I have to be careful not to get too involved in projects, since I have a department to run and don't have time for things like configuring servers. That was thrown to the side, however, when the CIO called me in.

He had spent the previous evening playing around with the Microsoft Windows Rights Management Services (RMS) client and demonstrated it to me using his Microsoft Passport. Passport, now called Live ID, was designed as a universal log-in service. It's supposed to let users log into many Web sites using one account, though it has never really caught on. But RMS can use Live ID as a valid credential to encrypt and verify a user's association with a document or some other electronic content. My CIO was so excited, he wanted to set up a demonstration for a group of executives on the Intellectual Property Protection Steering Committee. His idea is that if he can convince them that RMS is a worthwhile technology, they will fund an initiative to revisit DRM.

I agreed to a proof-of-concept deployment.

RMS is an appealing method for DRM, since the client and server software are freely available and most Microsoft Office applications are already RMS-enabled. There is a per-seat cost once deployed, but there is no initial cost for the software.

Passport Problems

I agreed to a proof-of-concept deployment of RMS, but we won't be using Live ID credentials. Live ID requires users to create the identification, which could cause some problems. I created a Passport ID many years ago, using my Yahoo e-mail address for validation. Unfortunately, I wasn't able to use the same ID within my company, since I couldn't bind my corporate e-mail address to my existing Passport ID.

So instead, we've installed the Microsoft Rights Management Server. The idea is that the RMS client will talk to Active Directory to obtain the location of the RMS server. (You have to configure what is called a "service connection point" within your corporate Active Directory infrastructure.) Once the client makes the connection to the server, it obtains the policies that apply.

This has turned out to be a clean and easily controlled method for deploying RMS. The installation of the server software took all of 10 minutes. For our proof-of-concept demonstration, we created two policies. The first we called the Intellectual Property Protection Steering Committee Only, or IPPSC-Only, policy. A document or e-mail with that policy applied can be opened by only the half-dozen members of the group with read-only privileges. With this policy, we're demonstrating that we can allow a small group of people to share documents among themselves. If you're not a member of the group, you won't be able to open the document or e-mail, even if you're an employee of the company.

The other policy, which we called Internal Use Only, allows anyone in the company with a domain account to open a document or e-mail. There are no other restrictions, so as long as you're an employee, you should have full control over any document or e-mail that has this policy attached.

I had our Windows expert create an install package so that the client could be installed with minimal effort by the end user. Remember, the audience for this test is a bunch of executives. If they have to click though a lot of install screens, they'll claim that the software isn't user-friendly.

The presentation to the steering committee went well, but naturally there were a number of questions, all beginning with "suppose." For example, "Suppose that I needed to view a protected document at a customer site," or, "Suppose I wanted to send a protected document to someone who wasn't an employee." I have a list of about 15 such questions that I will have to research and answer. But the goal of this proof of concept was to introduce a group of executives to a technology that, if deployed properly, could prevent the theft of intellectual property and save the company money. I believe I accomplished that goal. For now, I'll just sit back and wait for the checkbook to open.

WHAT DO YOU THINK?

This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/secjournal**

SECURITY LOG

Security Bookshelf

Self-Defending Networks: The Next Generation of Network Security, by Duane De Capite (Cisco Press, 2006).

The concept of self-defending networks has always intrigued me, and it's probably the goal of every security professional. This book provides a road map to building an effective self-defending network – though only one using Cisco Systems Inc. security appliances. The author provides some basic definitions and explanations of some of the core elements needed, such as 802.1x and Network Admissions Control. Any big Cisco user who's interested in learning that company's approach to the self-defending network will want to pick up a copy of this book.

– MATHIAS THURMAN

Researchers Detail Encryption for Net

Princeton University researchers Bernard Wu and Evgenii Narimanov say they have found a way to send encrypted data in the noise that accompanies fiber-optic cable signals. According to *CCN Magazine*, the sender converts a message into a short light pulse. It is then spread into a stream of optical data, and the recipient uses knowledge of how the message was spread to pick it out from the noise and decrypt it.

Budget Office's Server Breached

The Congressional Budget Office reported that someone breached one of its servers and obtained e-mail addresses of mailing-list subscribers. Law enforcement officials have begun an investigation.

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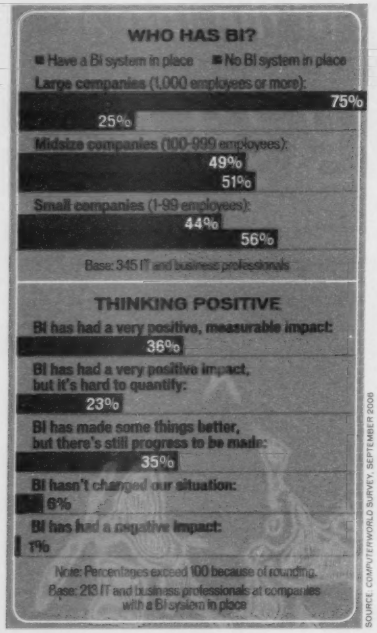

WHO HAS BI?
Have a BI system in place
No BI system in place
Large companies (1,000 employees or more):
75%
25%
Midsize companies (100-999 employees):
49%
51%
Small companies (1-99 employees):
44%
56%
Base: 345 IT and business professionals
THINKING POSITIVE
BI has had a very positive, measurable impact:
36%
BI has had a very positive impact, but it's hard to quantify:
23%
BI has made some things better, but there's still progress to be made:
35%
BI hasn't changed our situation:
6%
BI has had a negative impact:
1%
Note: Percentages exceed 100 because of rounding.
Base: 213 IT and business professionals at companies with a BI system in place
SOURCE: COMPUTERWORLD SURVEY, SEPTEMBER 2006

BI at age 17

Q&A The father of 'business intelligence' looks back at the term he coined — and forward to what may be the next big thing.

HOWARD DRESNER coined the term "business intelligence" in 1989 while an analyst at research firm Gartner Inc. At that time, the software industry was mired in acronyms like DSS (decision support system) and EIS (executive information system), and Dresner was seeking a term that would elevate the debate and better define the analysis of quantitative information by a wide variety of users.

He left Gartner in 2005 to join Hyperion Solutions Corp. as chief strategy officer. Dresner recently talked with IDG News Service reporter China Martens about the past 17 years of BI and its evolution into "business process management" (BPM).

Does today's definition of BI differ from what you originally intended? It's probably been redefined a little. It's all about ways to deliver information to end users without needing them to be experts in operational research. Early on, some companies tried to make the term even broader than "quantitative information" to include unstructured content. But it became clear that it was a simple problem which needed to be solved with structured content. That provides far more value to business than trying to boil the entire ocean. BI is in the middle, [with] structured information at one end and the user at the other end.

HOWARD DRESNER
Title: Chief strategy officer
Company: Hyperion Solutions Corp.
Location: Santa Clara, Calif.

Back in 1989, only a select development group understood what it was about and were trying it. I felt like the lone voice in the wilderness for years. Some people said business intelligence was an oxymoron.

Have the general improvements in computer technology made BI more readily adoptable? Possibly, possibly not. It's more how do you work out the value you're really going to get out of it. You do find a lot of BI was shelfware or partial shelfware, meaning it already got installed but people didn't use it. We'd just give someone a query tool and a data warehouse and say a prayer. It probably wasn't enough. [We figured] we'd give them query tools and warehouses, and somehow life would be better.

The next big thing is how to give people insight. Say the cost of a product line spiked; you know that nugget of insight. Then you need to figure out why it happened — is it an error, a trend? Instead of the approach [of], "Here's a query tool, hope you find something impactful," we're figuring out how to get actionable information into everyone's hands.

Business performance management is built on BI, but it goes beyond that; it's also thinking about operational and planning capabilities. You need to develop plans: How do you know whether information is good or bad? Whose gut feeling do you go with?

BPM is the next big thing. It's sort of what BI is growing up to become. Data quality matters [because BPM is] tied to operational planning. If you do it right, you have to really believe in the numbers.

What has held up BI adoption? It's typically not technology that holds adoption back; it's business culture and organization. Technically, we've come a long way. Information objects are getting so much more sophisticated and intelligent. If we could fast-forward in a time machine and grab the software of five years' time, it still wouldn't increase the rate of adoption. You've got to go through that cultural knothole of "Everybody knows how I'm doing." If you have perfect transparency with BI, it's not an issue; partial transparency is the issue. It's "I'll show you mine, but I can't see all of yours."

Second-tier management is concerned about losing their secured information and the ability to position information in the best possible light. Once BI is in place, people can get concerned and reveal hidden agendas. There are no more secrets. The right people have access to what they need.

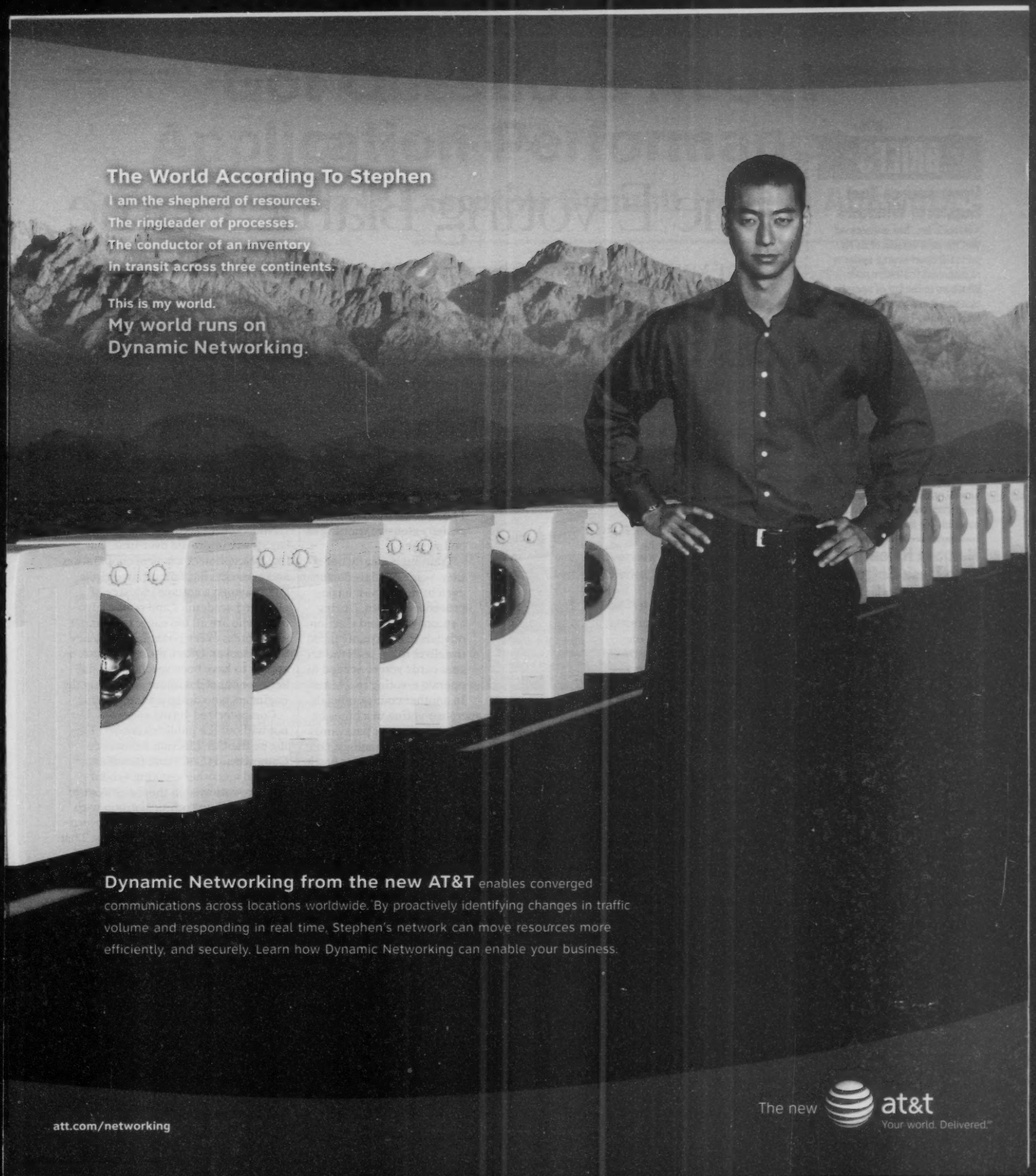
There are three groups: early adopters who just dive in, those who suffer from inertia and a small group trying to work against goals of the organization selfishly.

How do industries stack up in terms of BI adoption? What's the geographic distribution of BI users? Finance is all over it; they've got no choice. For years, consumer packaged goods [companies] were one of the early innovators. Probably 35% of people using BI are in finance, then consumer packaged goods, retail, manufacturing and government, and then it trails off. Everyone understands it's important. There's some health care and education, but they both have limited [IT] budgets.

The geographies where BI is extremely well established and quite mature are North America, Western Europe and Australia. The emerging markets are in Asia-Pacific, including Japan, and South America. China is growing, but they don't have the inclination to spend money on BI; they want to get it for cheap. That will change.

How will BI develop? Customers want to buy a portfolio of functionality; they want it to be fluid. Service-oriented architecture plays into it, and Web services. For instance, before a company grants someone financing credit, you'd want to access their propensity to pay. It's about managing a process and integration in context of the process. We support the management of process with technology. Before, we did the analysis in isolation.

BI will persist. We're seeing an inflection point in the market and hearing more about BPM and BPM enabled by BI. ▸


The World According To Stephen
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The ringleader of processes.
The conductor of an inventory
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BRIEFS

Open-source Tool Supports Windows

■ Hyperic Inc. has announced that the new version of its Hyperic HQ open-source systems management software adds Windows to the list of operating systems it supports, bringing the total to nine. The San Francisco-based company said Hyperic HQ lets systems administrators use a single interface to monitor, set alerts for and analyze any Windows application, including Exchange, Internet Information Server, .Net and SQL Server. A free version is available at *www.hyperic.com/downloads*. The enterprise version includes additional tools; it has an average annual price of $500 per managed machine. Site licenses are available for large deployments.

Numara Releases Help Desk Software

■ Numara Software Inc. in Tampa, Fla., has released Version 7.5 of its Footprints software for Web-based help desk and customer support. Developed by UniPress Software Inc., which was recently acquired by Numara, Footprints 7.5 can automatically record escalation processes, fill in time fields based on local time zones and compare metrics across days, months or other time intervals. Per-agent licenses start at $1,055. A starter package is priced at $9,995 for server software and three agents.

Juniper Unveils Three Appliances

■ Juniper Networks Inc. in Sunnyvale, Calif., last week announced the DX 3280 and DX 3680 data center acceleration appliances and the WXC 590 WAN application acceleration appliance. All three have software upgrades to improve application throughput, Juniper said. The WXC 590, available now, starts at $24,995; software starts at $5,795 for a 10-site license. The DX 3280, due in the first quarter of 2007, will cost $24,995. The DX 3680, available now, costs $49,995.

ROBERT L. MITCHELL

The E-voting Blame Game

IF YOU THINK Microsoft has security PR problems, just look at Diebold Election Systems, which is entangled in a seemingly endless imbroglio over computerized voting machines. The vendor has been under continuous assault by academics, advocacy groups, security experts and government officials over technical and security-related glitches involving its touch-screen e-voting systems and software.

ROBERT L. MITCHELL is a *Computerworld* national correspondent. Contact him at **robert_mitchell@computerworld.com.**

Some criticism has been deserved, but in other cases, problems in the field have more to do with the dubious practices of the officials operating the machines than with the technology itself.

With touch-screen e-voting systems, also called direct recording equipment (DRE), there's no paper ballot to hold on to as the physical embodiment of a vote and no way to know that your electronic ballot really dropped into the electronic black box. Although the electorate may feel safer with paper, fully electronic systems should be more flexible, reliable and efficient.

Computers have been used successfully to read, tally and report on paper ballots for years. Punch-card readers and optical scanners feed voting results into back-end tabulation and reporting systems. DRE technology takes automation a step further. It was supposed to alleviate paper-handling problems, such as the infamous hanging chads that sometimes afflicted punch cards, but it has brought its own challenges.

While some of the problems associated with e-voting are technology-based, many simply amount to a lack of best practices. For example, e-voting machines initially didn't generate paper records, so Diebold now includes a thermal printer. The printed summary, viewable through a window, reassures the voter and provides a paper-based alternative that officials can use to verify the electronic tabulations. But the Election Science Institute, in reviewing a Maryland election, worried that paper jams or printer malfunctions could cause "profound" problems. The advocacy group suggested extensive training of poll workers.

Training is clearly necessary. Some officials don't even have the most basic procedures down. During a recent Maryland election, officials in one county failed to deliver to the polls the access cards voters needed to operate e-voting machines. In another county, officials couldn't operate e-voting machines because they didn't have their passwords. Politicians blamed the technology. One lawmaker introduced legislation to ban it.

But politicians have no one to blame but themselves. The government provided funding to acquire e-voting machines, but it budgeted little to train people on how to operate the technology, according to a September report by the Computer Science and Telecommunications Board, an arm of the National Research Council. Any IT professional could have told them that the cost of acquiring technology is a small portion of total cost of ownership. The potential for chaos in the November election, when an estimated 40% of the population will use DREs, is exacerbated by that miscalculation.

What's worse, there's an appalling lack of concern for security in some states. For example, it's common in some locales to distribute e-voting machines to the homes of election officials for "sleepovers" for several days prior to an election. With physical security practically nonexistent, the disclosure of a vulnerability in e-voting machines that could allow someone with physical access to reprogram the device made the situation much more serious. A Florida official acknowledged the sleepover practice but was quick to place full responsibility on the vendor.

That's not to say that the e-voting machines haven't had problems. Vulnerabilities have cropped up, and Diebold has been accused of being slow to disclose vulnerabilities after discovering them. Glitches have caused machines to crash. And critics want more outside scrutiny of the proprietary code.

Nonetheless, e-voting technology has slowly improved over time. But that perception of a lack of cooperation and openness has fanned suspicions and spawned a cottage industry of alienated academics and public advocates who are all too eager to trumpet to the press every potential deficiency they discover. Often, those conclusions appear to have been reached and publicly announced without consulting the engineers who designed the systems.

Computerized voting can work, but not without the public's support. Testing by the U.S. Election Assistance Commission (EAC) isn't enough. Diebold and other e-voting vendors need to work within the framework of an independent technical group with representatives from industry, government, academia and other sectors. That organization should establish a set of technology standards, create a review process and certify compliance for e-voting systems. It should also build on the EAC's Best Practices Toolkit to develop better procedures.

E-voting isn't going away. The technical problems will be solved. But that's the easy part. Getting attitudes to change — and getting politicians, election officials and poll workers to implement the technology properly and be accountable to best practices — will be the bigger challenge. ▸

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Today's businesses are challenged in delivering high perfomance applications. Whether it's system complexity, overcoming the barriers to enabling rapid change and collaboration, or discovering problems too late to effectively fix them, the hurdles are daunting for those leading today's application deployment.

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8:40am to 9:20am	**Market Overview and Trends** Patrick Moroney, President & Partner, The Barnier Group LLC
9:20am to 10:00am	**Application Peformance at TD Ameritrade: An End-User Case Study** David Berger, Chief Infrastructure Architect, TD Ameritrade
10:00am to 10:15am	**Refreshment and Networking Break**
10:15am to 10:50am	**Application Performance Assurance Case Studies: It Pays to be Predictable** Andrew Hittle, Vice President, Quality Assurance Solutions, Compuware
10:50am to 11:25am	**Application Performance at Humana, Inc.: An End-User Case Study** Ramu Kannan, Director of IT, Humana, Inc.
11:25am to Noon	**Panel Discussion** Moderator: Julia King, Executive Editor, Events and National Correspondent, Computerworld Panelists: David Berger, Chief Infrastructure Architect, TD Ameritrade; Ramu Kannan, Director of IT, Humana, Inc.; Andrew Hittle, Vice President, Quality Assurance Solutions, Compuware; Patrick Moroney, President & Partner, The Barnier Group LLC

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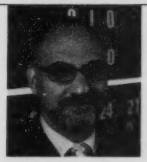


IT MENTOR
Yogi Berra, PMP
Project manager Ralph Sacco (left) discovers new insights into his line of work from the ever-quotable Yankee legend.
PAGE 44

Career Watch
Jerry Luftman of the Society for Information Management discusses employers' concerns about attracting, developing and retaining IT professionals. Plus, we look at the latest employment numbers, the skills CIOs are seeking and your employer's health care costs. **PAGE 45**

OPINION
IT Attitude Check
Treat your customers as if they could take their IT business elsewhere, says Bart Perkins. It's more and more likely that they can.
PAGE 50

The Team at the

What CIOs look for in their top leadership teams reflects the changing role of IT in business.

ILLUSTRATION BY LEIGH WELLS

WHEN YOU look at the IT leadership team at Regions Financial Corp., you see a diverse group of individuals. The vice president of application delivery advanced through the business ranks, as did the CIO, while the other five team members have had solid careers in IT. The vice president of technology risk management is known for his strategic and broad technical knowledge, while the vice president of telecommunications has a more tactical, get-it-done approach. The vice president of production services is a natural communicator who connects well with people throughout the organization. The director of information management and enterprise architecture hails from outside the banking industry and has a strong data management background. The vice president of the project management office has been at Regions for more than 25 years, with management experience in several technical areas.

But the team members also bear some strong similarities. Most would score off the charts on an analytical-thinking test, and all are voracious problem-solvers. They see IT as a department that needs to be run as a business, and there's no question in their minds that their common job is to support the bank's strategy.

When you combine all these differences and similarities in a team, the group becomes stronger than the sum of its parts, says John Dick, CIO at the $84.6 billion financial organization in Birmingham, Ala. This can be invaluable when problems arise. For instance, a recent downturn in the performance of the bank's online banking system prompted the leadership team members to jump in and apply their various approaches and skills rather than leave the problem to the application delivery group.

Dick says many leaders have yet to learn about the strength diversity brings to a team. "You see it all the time — people selecting leaders who are exactly like themselves, whether they're heavily analytical or very creative," Dick says. "And while homogenous teams can accomplish a lot in a short amount of time, to take it to the next level, you need a team with diverse experi-

ence and backgrounds."

His team didn't always perform at such a high level. When the group was formed five years ago, its members were more focused on their individual functions, Dick says. That meant he needed to spend more of his own time bringing the right mix of resources to bear when issues arose.

But now, especially as the IT group takes on higher-impact projects that cross many functional areas of the bank, "there's been a shift," he says. "Now, everyone knows each other's skills and capabilities, and everyone gets engaged in problem-solving, decision-making and fact-finding around lots of different topics."

Running With the Big Dogs

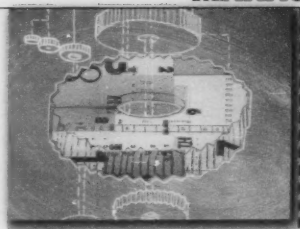
The Regions group is a good example of what it takes to climb to the top ranks of IT leadership and then thrive in that rarified air. While technology prowess is still important, it takes a back seat to leadership skills and solid business acumen, Dick and other CIOs say. Many IT leaders still rise through the technology ranks, but the elevator doors now open exclusively for those who can effectively lead other people and who put business concerns first.

This wasn't always true. "Just a few years ago, IT leaders were looking for people with specialized skill sets — the network guy, the e-mail person — and they wanted it all in-house," says Sheleen Quish, a consultant at Cutter Consortium in Arlington, Mass. "The whole trick was to get the right skills at the right level, at the right price."

Today, however, those skilled specialists have been replaced by people who can lead not just internal workers but also external vendors and integrators to drive business objectives, she says. "It's a smaller group of people that have the ability to work as a team and who don't think of themselves in silos," Quish says.

In addition, the skills, backgrounds and capabilities needed on the top IT team are so varied that IT leaders realize they can't fill the bill with one profile or type. When Chief Technology Officer Gary Greenwald was forming his five-person leadership team at TD Ameritrade in New York, for example, he says he was conscientious about mixing personalities and strengths.

"We do a great deal of work to understand the mix of people on the team," he says. "If someone is strong in two, three or four areas, we want to offset that with individuals with skills in three or four other areas — that's when you put a great team together."



The Right Stuff

THE TRAITS, SKILLS and competencies that companies require in their IT leaders have undergone many changes in the past few years. Some of the most valued characteristics are too new, unusual or amorphous to make it into job descriptions or résumés. Gary Greenwald, CTO at TD Ameritrade, talked about some of these previously unsung attributes that are increasingly valued in IT leaders.

Connectivity

For years, technologists have been urged to improve their communication skills. But it's one thing to communicate with people and quite another to connect with them. "Communicating is broadcasting and pushing out information," Greenwald explains. "Connecting is that key component of a strong listener who can take information in as well as communicate outwardly." Greenwald says his company looks for people who can internalize what they hear and replay it back to their teammates or their clients to ensure that they're on the same page.

Courage

IT leaders look for people who are courageous enough to share their perspectives, even when they threaten to upset the status quo. An example is stopping a project midway through because you see that it's no longer crucial to the business or that a change on the technology landscape favors a different approach. "As human beings, we tend to avoid conflict, but if we're truly going to be a partner with the business, we have to engage in those tough conversations, no matter how challenging," Greenwald says.

Creativity

As businesses strive for innovation in their products, services and processes, IT can play a strong role in both supporting the creative process and suggesting improvements. "IT needs to be at the table when the business is vetting new prospects and possibilities, and we need to come up with our own ideas to help bring these visions to reality using technology," Greenwald says.

The role of the technology leader is to foster innovation among the staffers, some of whom may have insights that are equal or superior to those of their business partners, he says, adding, "We have to encourage and reward people with creative ideas."

– MARY BRANDEL

That's why CIOs are not just looking for highly capable individuals anymore; they're looking for people who can blend their skills, talents and personalities into a smoothly operating team. At Regions, for instance, teamwork is so important that a couple of people with business expertise and strong technology capabilities were actually let go because "they fought the team environment," Dick says. "They wanted to be the Lone Ranger and get all the credit for their own group, and that's not tolerated here."

"We won't allow one of our team members to fail," adds Steve Zimmerman, vice president of technology risk management at Regions. "We'll cross lines to watch each other's backs."

Non-negotiables

But for many CIOs, there are certain competencies that are must-haves for every member of the top IT team. When Jody Davids, CIO at Cardinal Health Inc. in Dublin, Ohio, formed her 12-person IT team last year, her No. 1 objective was to find people with strong leadership capabilities. And no wonder: These people have to function in a company that, because of its many acquisitions, is undergoing fast growth.

Two years ago, Cardinal Health went through a radical shift to a shared-services strategy, centralizing previously autonomous IT departments throughout the world. "They need to deal with constant change in an orderly fashion," Davids says.

Her hand-picked team includes four people who head the IT "centers of expertise," which handle business management, IT strategy, risk management and enterprise architecture. Another team member is in charge of the IT infrastructure group, and another leads the application development area. Six additional people lead the business-partner teams; their main job is to ensure business/technology alignment.

But no matter which roles they play, the most important thing each team member brings to the picture is what Davids calls "a bundle of skills" around communication, strategic thinking, facilitation, influence, the ability to foster "followership" on a team and the wherewithal to work through complex situations. They also need to be likable, knowledgeable and trustworthy, Davids adds. These leadership qualities are even more important than the person's previous experience, she says.

A good example is Pegge LaValle, the woman Davids chose to lead the business management center of expertise and who had previously run the customer service organization at Cardinal Health. "I asked her to run the business management area, and she said she had nothing like that in her background," Davids says. "But when I thought about what it took to be successful in that role, it wasn't about finance. I needed a master diplomat, a person very skilled at building relationships and who could negotiate tough situations with client groups when pulling budgets together — and this is the person who came to mind right away."

Davids persuaded LaValle to take the job, pointing out that she could hire people with financial and budgetary backgrounds to support her. "She had never envisioned doing anything like this, but it turns out I was right. She's become extremely effective," Davids says.

Another example is Jim Egan, the leader of the IT infrastructure group, whose background was not in infrastructure but in application development. "I knew he was a strong leader with a great deal of acumen around the business of running IT, which you need when you're managing an enormous budget and a significant number of assets and you're cutting large deals with suppliers on a regular basis," says Davids. She also knew that he was able to assemble and manage a strong team and that he had excellent strategy development and execution capabilities.

Likewise, Steve Collignon, the person chosen to lead the risk management area, had previously run Cardinal Health's technology infrastructure. Although he had no explicit experience in risk management, it was more important to Davids that he was capable of building a brand-new operation and had an exceptional ability to work effectively with people.

"Anybody in IT understands that if it weren't for change, we wouldn't have a job," Davids says. "The ability to lead people through change is what makes the difference."

Brandel is a Computerworld *contributing writer in Newton, Mass. Contact her at marybrandel@verizon.net.*

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9:20am to 10:00am	**A Holistic Approach to End-to-End Service Assurance** Dr. John S. Camp, Chief Information Officer, Wayne State University
10:00am to 10:15am	**Refreshment and Networking Break**
10:15am to 10:50am	**Application Performance Assurance Case Studies: It Pays to be Predictable** Andrew Hittle, Vice President, Quality Assurance Solutions, Compuware
10:50am to 11:25am	**Application Performance: An End-User Case Study** Ramu Kannan, Director of IT, Humana, Inc.
11:25am to Noon	**Panel Discussion** Moderator: Ron Milton, Executive Vice President, Computerworld Panelists: Dr. John S. Camp, Chief Information Officer, Wayne State University; Ramu Kannan, Director of IT, Humana, Inc.; Andrew Hittle, Vice President, Quality Assurance Solutions, Compuware; Carlos Recalde, Managing Director, Successful Technology

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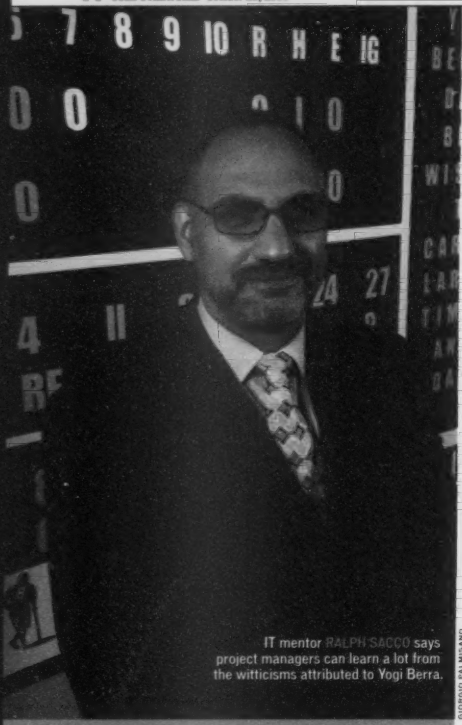

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GIORGIO PALMIANO

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When a project has you stumped, just think: 'What would Yogi do?'

By Ralph Sacco

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– LINDA ROSENCRANCE

Net job increase in the first half of 2006 for the high-tech services sector.

SOURCE: AEA

Jerry Luftman Q A

TITLE: Vice president for academic community affairs

ORGANIZATION: Society for Information Management, Chicago

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The survey found that the average tenure for CIOs is 3.6 years. Any idea how this compares with previous studies? It seems like their tenure has lengthened in recent years. This year, 54% of the CIOs were in their jobs three years or less. Last year, it was 47%. In the past, the average tenure was 18 months. Over the years, I've seen a steady increase, where it's been closer to four years.

What's behind this? I think – I hope – that CIOs are learning how to be more like business executives as opposed to being a technical manager of geeks in the basement.

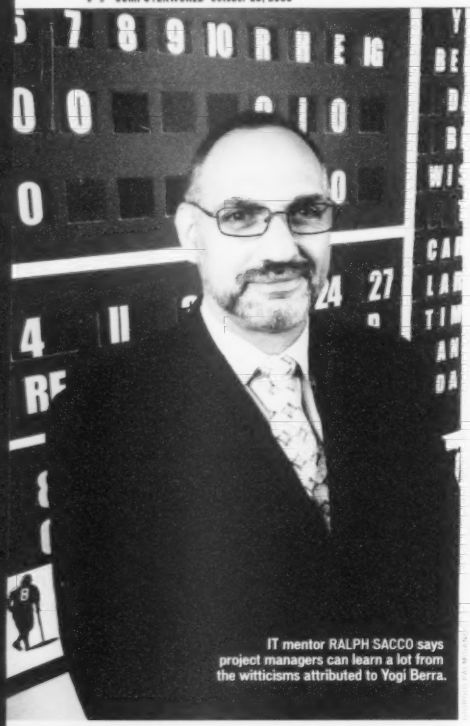
HEALTH CARE COSTS AND COVERAGE

PAGE COMPILED BY JAMIE ECKLE.

The Henry J. Kaiser Family Foundation and the Health Research and Educational Trust released their **2006 Employer Health Benefits Survey** late last month. Here are some numbers gleaned from the phone survey of 3,159 randomly selected public and private employers:

QUICK FACTS

- Premiums for employer-sponsored health coverage **rose an average of 7.7%** in 2006. That's **down from 9.2% growth** in 2005 and well short of the **recent peak of 13.9% growth** in 2003. But it's still more than **double the rise in workers' wages (3.8%) and overall inflation (3.5%)**.
- **Premiums have increased 87%** since 2000.
- **Family health coverage now costs an average of $11,480 annually**, with workers paying an average of **$2,973** toward those premiums. That's about **$1,354 more than in 2000**.
- The percentage of small companies (those with three to 199 employees) that offer health care coverage fell **from 65% in 1999 to 60% in 2006**. Coverage at companies of 200 or more employees **decreased from 99% to 98%** during that period.



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PAGE COMPILED BY JAMIE ECKLE

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Q&A

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Functional area knowledge, such as in marketing or finance, is among the top 10 skills survey respondents said they were seeking in entry-level hires. Are most computer science students obtaining this kind of experience? One of my concerns from an entry-level perspective is that the kids don't get that at most universities.

What about internships? Internships help, absolutely. To me, that's fundamental to a successful program.

The survey found that the average tenure for CIOs is 3.6 years. Any idea how this compares with previous studies? It seems like their tenure has lengthened in recent years. This year, 54% of the CIOs were in their jobs three years or less. Last year, it was 47%. In the past, the average tenure was 18 months. Over the years, I've seen a steady increase, where it's been closer to four years.

What's behind this? I think – I hope – that CIOs are learning how to be more like business executives as opposed to being a technical manager of geeks in the basement.

HEALTH CARE COSTS AND COVERAGE

QUICK FACTS

- **Premiums have increased 87% since 2000.**
- **Family health coverage now costs an average of $11,480 annually**, with workers paying an average of **$2,973** toward those premiums. That's about **$1,354 more than in 2000**.
- The percentage of small companies (those with three to 199 employees) that offer health care coverage fell **from 65% in 1999 to 60% in 2006**. Coverage at companies of 200 or more employees **decreased from 99% to 98%** during that period.

The Henry J. Kaiser Family Foundation and the Health Research and Educational Trust released their **2006 Employer Health Benefits Survey** late last month. Here are some numbers gleaned from the phone survey of 3,159 randomly selected public and private employers.

Premiums for employer-sponsored health coverage **rose an average of 7.7%** in 2006. That's **down from 9.2% growth** in 2005 and well short of the **recent peak of 13.9% growth** in 2003. But it's still more than **double the rise in workers' wages (3.8%) and overall inflation (3.5%)**.

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_INFRASTRUCTURE LOG

_DAY 45: These underutilized storage boxes have proliferated exponentially. Their inability to share capacity has doomed us. We're trapped in a maze of our own creation.

_DAY 47: I tried to give Gil a boost over this wall, but he pulled a hammie.

_DAY 48: I've taken back control with IBM System Storage™ SAN Volume Controller. It puts my entire storage universe into a simple, virtualized pool. And, unlike EMC, IBM has fourth-generation virtualization technology and over 2,000 customers. I am seeing results.

_Productivity is up. Utilization is up. I.T. guys lost in mazes of data is down.

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MANAGERS' FORUM

WITH PAUL GLEN

ADVICE

I hope this monthly column will provide a lively exchange of ideas with IT managers. I'll do my best to answer your questions, and some of your responses will run alongside in "Readers Talk Back."

? We've got some nice documentation tools to help keep projects straight, but everyone still wants to just use Word, Excel and maybe MS Project. We get more buy-in on using the new tools from IT's customers than from the IT project managers. How do I help get them on board?

Buried in your question, you've got a few interesting assumptions that I think we need to examine to really get to the heart of the issue.

First, you're assuming that these robust new tools that you've acquired are "nice." We've got to be clear about what makes something a nice tool. Just because something is brand spanking new and sports every option on the planet doesn't necessarily make it desirable.

I recently visited a museum where a blacksmith was demonstrating 19th-century manual nail-making. His anvil and hammer were far from shiny and new, but he made impressive nails with these old tools. His tools were well suited to making rough nails from steel bar, and he was clearly familiar with them. I doubt that this particular blacksmith would have done as well with a computer-controlled machine tool. He knew hammers and anvils and liked them. (Of course, these tools are not very efficient, which is why I had to go to a museum to see them used.)

What makes something a nice tool is its suitability to the job at hand and the user's familiarity with it. So it is with your documentation tools.

Your project managers are probably resisting because they don't consider the tools so nice for these reasons:

1. They don't think the tools are suited to the job. They may feel that the tools don't work at all or require too much additional work for the marginal benefit over Microsoft Office.

2. They don't want to or don't have the time to learn to use the new tools. They are not familiar with them and have no desire to be.

You're also assuming that customer buy-in is evidence of a tool's desirability. It's not. Customers generally care only about results and not process. If I hire someone to paint my living room, I don't care if he uses brushes, rollers or finger paints, as long as the price is good and the room looks the way I want it when I want it. Your customers will probably agree to almost anything you propose that they believe will give them the results they want.

And finally, you're assuming that getting the project managers on board is going to help them. I suspect that they don't feel that you're trying to help — just trying to cram a new tool down their throats. It doesn't sound like you're listening to them or their real concerns. Even if the tools are fantastic, they will resist if they don't feel that you are listening to them. Helping someone get on board sounds a bit too much like "making an offer they can't refuse."

So taking all this into account, I'd suggest the following approach: Back off on the tool, build consensus on the problem, and then sell the solution. It sounds like your current approach is to push a tool as a solution to a problem that the project managers either can't identify or don't agree exists. You probably don't have agreement on either the problem or the solution.

The staff will probably be more willing to learn new things and adopt new work methods if they recognize the problems you are trying to address, agree that these are problems worthy of resolving and accept the long-term benefits they will receive from using the new tools. As it is, you can only hope for grudging compliance rather than real support.

? Everyone talks about how important project plans are, but no one really says why. What is the role of the project plan in the success of a project?

You ask an important question. In general, I find that when a bunch of people all agree on something, they don't really talk about why. As soon as there seems to be a general consensus, the discussion stops, and we assume that we all agree for the same reasons. Of course, nothing could be further from the truth.

The reasons for a project plan that I hear cited most often mainly focus on what happens when you don't have one:

1. Team members don't know what to do.

2. You can't plan for effort, duration or cost.

3. You won't know when you're done.

These are all good reasons to have a plan, but they all seem to assume one thing that rarely happens: The plan will be followed. I've never seen any substantial project that actually followed the details of a plan. No one knows how a project will really unfold.

To me, the most important reason to plan a project is to grapple with all foreseeable issues and approaches. Planning helps prepare the minds of the participants to clarify the goals and the means for achieving them. That way, when the project inevitably deviates from the original plan, they will be prepared to deal with reality. ▸

More on Unreasonable Deadlines . . .

Hi, Paul,

Sure, we could all work harder and smarter in an attempt to cut costs and time on projects, but there is often still a gap between what the VP wants and what you think can be done. In my experience, the VP will often say, "Just get it done." I don't have a good answer to that problem. But I think becoming a better politician or influencer might help. – P.W.

Great comments! I think that the reader who originally asked me about unreasonable deadlines needs to develop a relationship based on mutual respect with the VP in order to be able to deliver difficult news. If one allows a supervisor to give unworkable orders and then simply pretends that things will work out, that's a recipe for a relationship that will spiral into disrespect. The VP asks for the unreasonable. The IT person thinks that the VP is an idiot and then doesn't deliver. The VP then thinks the IT person is an idiot . . . and on it goes. – P.G.

READERS TALK BACK

. . . And Techies Who Won't Do Maintenance

Hi, Paul,

We know that 98% of techies would prefer new development, but their managers know that the sharpest of those are needed to "perfect" existing code. So therein is the catch-22 that I'm not sure can be completely managed just through hiring practices. – B.H.

Thanks for your thoughtful comments. I'm not sure that I agree that new code is so much easier than maintenance. The challenges are different. But you make a good point that just hiring the "right people" can be hard if for no other reason than organizations go through new development and maintenance life cycles just as products do. The balance between the need for inventors and perfectors is always shifting. – P.G.

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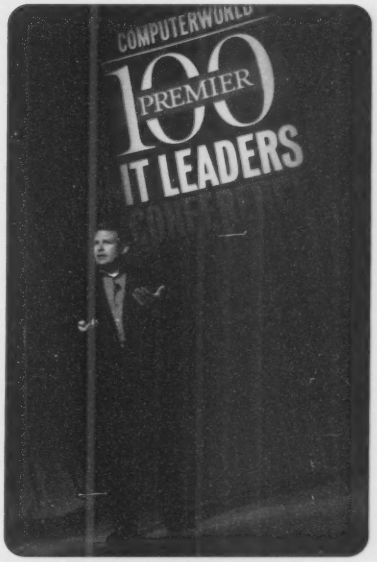

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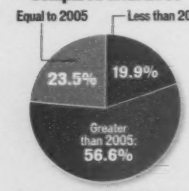
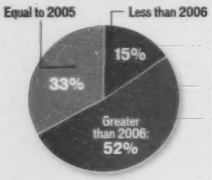
IT BUDGETS

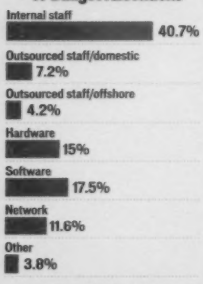
2006 IT Budget Compared With 2005



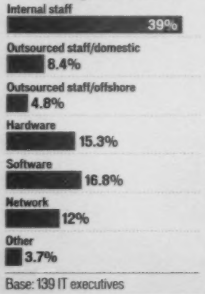
Projected 2007 IT Budget Compared With 2006



2006 IT Budget Allocations



Projected 2007 IT Budget Allocations



SOURCE: SOCIETY FOR INFORMATION MANAGEMENT IT TRENDS SURVEY, JUNE 2006

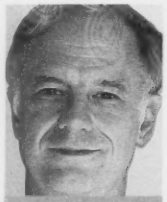
Base: 139 IT executives

BART PERKINS

IT Attitude Check

THE ATTITUDE with which you approach a situation strongly influences how effectively you address it. The way IT organizations think of (and treat) the people who use their products and services has a significant impact, both on IT's effectiveness and on how IT is perceived.

Historically, IT organizations have provided services to "users," a word with primarily negative connotations. *User* rhymes with *loser*. It also brings to mind "being used." Even worse, it calls forth pictures of the recreational drug industry! Simply referring to "customers" instead of "users" can help your staffers develop a better attitude toward the people they serve.



BART PERKINS is managing partner at Louisville, Ky.-based Leverage Partners Inc., which helps organizations invest well in IT. Contact him at **BartPerkins@LeveragePartners.com**.

David Maister's book *True Professionalism* (Free Press, 1997) states, "Professionalism is predominantly an attitude, not [just] a set of competencies. A real professional is a technician who cares." A customer care mind-set will influence the way your staff operates.

Here are some ways to achieve that customer-oriented attitude:

Conduct suffcient market research. Most industries do heavy market research before developing new products. Make sure you adequately research the needs of your customers (whether internal or external) when designing or selecting new IT products and services.

Acknowledge the customer's importance. Without customers, there is no need for an IT organization. Furthermore, jobs requiring no customer interaction are prime candidates to send to countries with lower cost structures.

Treat customers respectfully. The days when IT organizations had all the technical knowledge and could simply dictate terms to users are over. Today's technically savvy customers expect to explore technical issues and develop systems jointly with the IT staff. Anticipate open discussion, technical input, design compromises and great ideas — particularly from the Web 2.0 crowd.

Discover the real problem. Many customers merely express their frustrations or request systems that address the offending symptoms while ignoring the root causes. Successful IT corporations actively listen to their customers in order to discover the underlying problems. Investigate thoroughly — ask questions, clarify issues, and explore multiple possibilities before designing systems. Look beyond the boundaries of the customer's complaint.

Set customer expectations correctly from the beginning. Be honest and realistic about the effort required, whether you are designing a new system, fixing a problem or preparing a business case. Don't just tell customers what they want to hear, even when they persistently demand that you do. (You will pay later if you succumb.) Continue to manage expectations throughout any IT endeavor. Keep your customers well informed, especially if for any reason costs will increase or deadlines will slip. The closer to a deadline you confess, the more fallout you will suffer. Never surprise a customer about costs or schedules.

Establish mutual accountability. Make sure significant commitments (on both sides) are captured in writing. Meet your commitments, and hold customers politely but firmly accountable for any decisions or deliverables to which they have agreed.

Decline to work on disasters. Amply warn a customer who is about to make a genuine mistake. It is best to decline projects when there is no feasible way to make the customer happy. Losing revenue is preferable to having your reputation compromised by dissatisfied customers.

Use customer-focused performance measurements. Most IT organizations need to become better at measuring their own performance in terms that are important to (and understandable by) their customers. At a minimum, measure service levels and calculate accurate unit costs for each IT service provided — even if it means implementing cost accounting.

Measure customer satisfaction. Perform regular customer reviews to discover any hidden dissatisfaction. Ask customers how well IT listens, how well IT understands their business, how responsive IT is and so on. Measure your customers' satisfaction levels *before* they reach zero. Remember that what you measure is what you can manage. In addition, conduct a formal customer satisfaction review at least annually. Ask your customers if they would buy your services again if they had a choice. If they say no, work with them to design a solution before they investigate alternatives.

IT organizations exist to help customers improve their business operations. Adopt an attitude of appreciation, and start treating your customers as if they might take their business elsewhere. With the wide choice of IT providers and offshore options currently available, many actually can. These days, customer satisfaction is not just necessary for success; it's required for survival.

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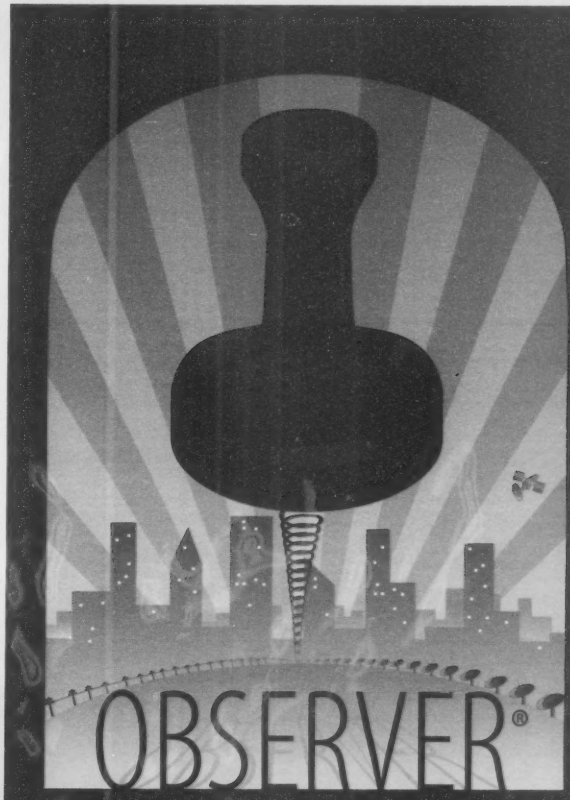

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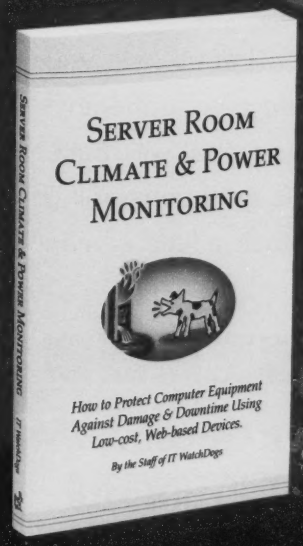
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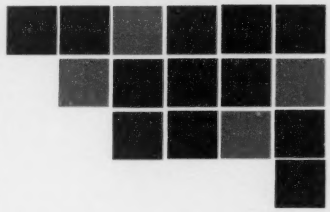

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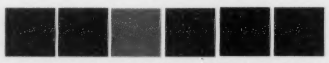

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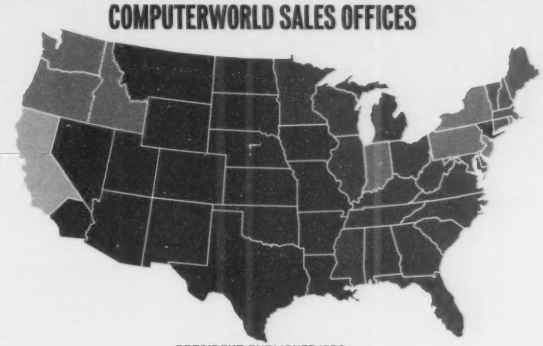

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Cisco Pushes Its Way Into Videoconferencing Market

BY MATT HAMBLEN

In its first foray into the videoconferencing market, Cisco Systems Inc. today will announce two so-called telepresence systems that it said are capable of supporting conference-room-size areas.

Meanwhile, Pleasanton, Calif.-based Polycom Inc. will introduce a line of three high-definition videoconferencing systems designed to support telemedicine, education and other applications.

Polycom's new HDX 9000 series ranges in price from $13,999 to $19,999, plus $4,999 for an HD camera. Those costs are a fraction of the list pricing of $79,000 to $299,000 that Cisco has set for the TelePresence 1000 and TelePresence 3000, the two videoconferencing systems it is rolling out.

CISCO says users can set up a videoconferencing room with its three-display TelePresence 3000 system for about $250,000.

The High-End Path

But Randy Harrell, director of TelePresence product marketing, said Cisco believes its technology will provide higher-quality performance than traditional room-based teleconferencing equipment does. Cisco claims that its video screen resolution is 1,080p in a progressive-scan format, about four times the quality of a standard interlaced TV and higher than the 720p resolution supported by Polycom's new products.

Cisco built all of its videoconferencing components in-house, including an echo-canceling microphone, an HD camera, a plasma screen video display and a coder/decoder device that translates analog signals to digital ones and back again.

Harrell said it would cost about $250,000 to set up a conference room capable of handling virtual meetings for a dozen people. That price includes a three-display TelePresence 3000 system and a year of maintenance from Cisco.

Morgan Fisher, co-owner of Beth Melsky Satellite Casting in New York, has been running a beta-test version of a Polycom HDX 9000 for six weeks in conferencing studios in New York, Los Angeles, Miami and Chicago that advertising agencies and directors of television commercials use to cast actors.

Fisher said he is impressed by both the video and audio capabilities of the new technology. "I noticed a big difference with the HD," he said. "It's so much better than anything I've ever heard."

Directors have told Fisher they can spot more subtle differences between actors with the HD system. "If you sit in a room and have a five-hour conversation but the lighting and acoustics are bad and you hear noise in the background, it taps the senses," he said. "The same is true for videoconferencing if the screen and sound are not that crisp. Your brain tries to fill in the gaps, which can be very tiring."

Zeus Kerravala, an analyst at Yankee Group Research Inc. in Boston, said he went into a demonstration of Cisco's products "really skeptical but came out a changed man. This is the first videoconferencing system I've seen that has the opportunity to change the way people interact with one another."

But Kerravala noted that Cisco's systems are "relatively expensive" and require the use of a specialized room.

Cisco's strategy is somewhat similar to Hewlett-Packard Co.'s Halo program, under which HP offers videoconferencing links from studios that it designed in partnership with movie maker DreamWorks Animation LLC.

Continued from page 1

Smart IDs

clined to provide more details.

Matt Neuman, director of business development at Jacob & Sundstrom Inc., a Baltimore-based systems integrator that is helping the SSA with its smart-card implementation, said that many agencies appear to be ready to meet "the letter of the law, if not the spirit of the law" on issuing the PIV cards. "But it at least shows that everybody is focused on it," he said.

The use of PIV cards for verifying the identities of all federal workers and contractors was mandated by Homeland Security Presidential Directive 12. The unfunded HSPD-12 mandate specified that agencies must adopt a common identification credential for access to government facilities and computer systems.

Friday's deadline and an earlier one calling on agencies to develop procedures for verifying the identities and backgrounds of all workers by last October were both considered exceptionally aggressive because of funding issues and the technology and process changes required.

Robert Langston, director of the office of security and emergency planning at the Department of Housing and Urban Development, said last week that HUD hopes to begin producing fully functional PIV cards by Wednesday "and then continue to do so for all new employees and contractors from that point forward."

Initially, the cards will be issued to HUD's headquarters staffers via recently procured identity management and card management systems, Langston said. He added that "a small number" of HUD field staffers who work in Washington, New York, Atlanta and Seattle will be sent to shared HSPD-12 enrollment centers that have been set up in those cities by the U.S. General Services Administration.

Major milestones on Homeland Security Presidential Directive 12

AUG. 27, 2004: President Bush signs a directive mandating a standard approach to authenticating federal employees and contractors.

JUNE 27, 2005: Federal agencies must submit HSPD-12 compliance plans to the White House Office of Management and Budget.

OCT. 27, 2005: Agencies are required to implement new processes for verifying the identities of workers and checking their backgrounds.

OCT. 27, 2006: All agencies must start issuing personal identity verification, or PIV, cards to control access to buildings and IT systems.

The enrollment centers include systems that can be used to verify the identities of employees, fingerprint and photograph the workers, and issue PIV cards to them. Eventually, as many of HUD's 81 field offices as possible will take advantage of the centers as more are deployed across the country, Langston said.

The strategy should help HUD save "a lot of money" on its PIV enrollment and card-distribution costs, according to Langston. Instead of having to set up its own enrollment facilities, he said, "we just pay a fee for service."

Larry Orluskie, a spokesman for the Department of Homeland Security, said the DHS this week will start rolling out PIV cards to about 5,500 employees in the Washington area. The agency's goal is to make the cards available to all of its employees and contractors within a year, he said.

The DHS is using ID One Cosmo smart cards made by Nanterre, France-based Oberthur Card Systems SA. Like all PIV cards, Oberthur's feature both a contact interface, such as a magnetic stripe, and a contactless radio frequency interface to make it easier to integrate the cards with both building access and IT security systems. At the DHS, though, the cards initially will be used only for physical access, Orluskie said.

Likewise, the SSA at first will use PIV cards only to control access to buildings and other facilities before eventually linking them to its computer systems, said agency spokesman Green.

ActivIdentity Inc. in Fremont, Calif., is supplying smart-card technologies to several government agencies. Robert Brandewie, the company's senior vice president of public-sector solutions, said meeting the HSPD-12 card-distribution deadline even in a small way "is a tremendous accomplishment," given the amount of work that was needed and the relatively short amount of time that was available to agencies.

"There has been a tremendous amount of behind-the-scenes effort to get the infrastructure ready and to get the technology in place to meet the deadline," Brandewie said.

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_DAY 28: These slow, inefficient boxes don't have enough power to run my high-end business apps. They don't have enough power to do anything except crash.

_Need sleep. Will try to dream that I am I.T. King of a planet that only produces really powerful servers.

_DAY 30: I've got it: the IBM System x™ with the AMD Opteron™ Processor. It has more power and more efficiency than I ever imagined in a standards-based server. IBM Xcelerated Memory Technology™ can let us access data up to 15 percent faster than other servers for maximized performance.* I can finally sleep in my own bed again.

_I have taken back control. I am Ned, benevolent I.T. King of this...uh, data center.

IBM.COM/**TAKEBACKCONTROL**/X

FRANK HAYES ■ FRANKLY SPEAKING

Password: 0bs0l3t

FULLY A THIRD of our users write down their passwords instead of remembering them. That's according to a recent study of 325 enterprise users, conducted by Nucleus Research and KnowledgeStorm. And I'm surprised. *Only* one-third? It's a small miracle that the number isn't closer to 90%.

After all, what do we ask of users when it comes to passwords? We ask them to choose complex, hard-to-remember passwords. And to choose a different hard-to-remember password for each system.

And then we tell them not to write all those passwords down.

That's crazy. But that's the password as we know it today.

No wonder our help desks spend so much time resetting passwords. And no wonder users compromise security by using Post-its, cheat sheets and text files to keep track of all their passwords. These days there are just too many of them, so something's got to give — whether it's complexity, variety or secrecy.

Passwords were a fine idea back when a user needed just one to log in at a time-sharing terminal. But now it's time to move on to other kinds of authentication, whether that means single sign-on, hardware tokens or biometrics. Let's face it, the password is at the end of its useful life.

And passwords aren't alone. Plenty of other IT standards were big steps forward in their day — dramatic technological advances that reshaped the face of IT shops and user desktops alike. But time has passed. The world has changed. And they just don't make sense anymore.

Cases in point:

■ **ASCII.** A big improvement over IBM's proprietary EBCDIC character set in the 1960s. But today we do business globally, and ASCII can't even handle euro or yen signs. Fortunately, there's Unicode, a multibyte character set that's built on top of ASCII, handles virtually every alphabet used today and is supported by most major applications and operating systems. It's time for corporate IT to make that our standard, too.

■ **The CRT.** It beat the heck out of the clattering teletypewriter it replaced. But today, cathode ray tube screens are hot, heavy, large, power-hungry, fragile, full of toxic materials and prone to getting blurry. Their only advantage: They're cheap to buy, even though they're much more expensive to use than other display technologies. It's time to apply TCO to the CRT and declare it DOA.

■ **The mouse.** A huge step forward from keyboard-only menus. But the mouse was designed decades ago for moving a pointer on a TV screen. We can do better today. The current crop of tablet PCs may be lame, but they embody the right idea: directly selecting items with a fingertip or stylus. It's time to cut out the middleman . . . er, mouse.

■ **The hard disk.** Stand-alone drives in PCs fail. And when they do, data goes away — often very suddenly. That's completely unnecessary. Several small drives could fit in the same space, configured as a RAID array. That would make most disk failures survivable.

■ **Regular backups.** Today's databases are too big, and they can't stand still for frequent snapshots. Besides, backups fail far too often. We're better off with continuous logging of transactions, so instead of a mystery-meat stew of potentially suspect data from a backup, we can rebuild a crashed system by replaying what actually happened. That would make the Sarbanes-Oxley boys happier, too.

■ **Air-cooled servers.** Air was a big improvement over water cooling for mainframes — no more plumbing in the computer room. But the heat generated in data centers continues to soar. We've passed the point where moving cooled air past racks and racks of servers is efficient. It's time to bring back water or other kinds of direct cooling — and time for vendors to start building support for those cooling systems into blade servers.

Can we dump these technologies that have reached their expiration dates? Not anytime soon — we depend on them too much. But, like passwords, their time is past.

And the sooner we start planning to replace them, the less crazy our work will be.

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com.**

SHARK TANK

Tightening Up, Loosening Up

This company's Internet use policy is pretty weak but better than nothing. Then one user is found with more than 16GB of pornography on the network. "But the policy only said you couldn't send or receive porn, not that you couldn't *have* it," reports a pilot fish on the scene. "The user was disciplined but kept his job. In the wake of this fiasco, a high-ranking VP decided to spearhead the push for a new comprehensive policy with teeth. Fast-forward about two years: Guess who was the first person caught and fired? The VP himself – and was he angry about it!"

Not So Hot

User on sick leave wants to read his e-mail but can't remember the password that was sent to him long before. Can you help? he asks his IT pilot fish friend. "I phoned the help desk and they said they could only reveal the new password to the user," says fish. "But the help-desker came up with a solution: They would send the password to a Hotmail address that I specified."

Just Shut Up!

Lab tech complains his workstation has started making an unbearably loud whine, so support pilot fish investigates. "We discovered a piece of duct tape covering the SCSI controller card's speaker," fish says. "It apparently had been on there for a while and finally loosened up enough to let the sound out. Turns out it was an alarm for the RAID degrading because of a failing hard drive. The lab tech says the PC has always had a little whine for as long as he's been here – about one and a half years."

Not Quite Right

Support pilot fish gets a call from a user who says the power supply for her laptop is sparking and flaming. "My first question was, 'Did you unplug it?' She replied yes," says fish. "I headed over to her office. She *had* unplugged it – from the computer. Not from the wall, where the electricity comes from. I'm shocked she didn't burn down the building. Ever since, I've been giving users a pop quiz about what to do in this situation."

Um, No

Pilot fish leaves a message for a user to call his pager number but gets no response. Next day, fish tracks down the user to find out why. "Yes, I paged you three times," user tells fish. "Why didn't you call back?" Hmm, says the now very concerned fish, what exactly did you do? "I dialed your number." Good, says fish, and then? "I heard a 'tweedle.' " OK, then what? "I hung up, of course." You what?!? "Certainly – didn't it read my number?"

SHARKY WANTS TO READ your true tale of IT life. Fire it off to me at **sharky@computerworld.com**, and a snazzy Shark shirt is yours if I use it. And check out Sharky's blog, browse the Sharkives and sign up for Shark Tank home delivery at **computerworld.com/sharky**.

Congratulations to Our Finalists!

The SNW "Best Practices in Storage" Award Recipients will Be Honored Thursday, November 2nd at Storage Networking World in Orlando.

Storage Networking World (SNW), in conjunction with Computerworld and the Storage Networking Industry Association (SNIA), proudly presents the eighth SNW "Best Practices in Storage" Awards Program. This program honors IT user "best practice" case studies selected from a field of qualified finalists.

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Finalists in each of the following categories are:

Innovation and Promise

- Digital Film Tree, Hollywood, California
- Level 3 Communications, Broomfield, Colorado
- Pixar Animation Studios, Emeryville, California
- The Virginia Department of Motor Vehicles, Richmond, Virginia
- Warner Bros. Entertainment Inc., Burbank, California

Planning Designing and Building Strategic Storage Infrastructure

- Defense Contract Management Agency, Fairfax County, Virginia
- Denver Health, Denver, Colorado
- Industrial Color, New York, New York
- Salisbury University, Salisbury, Maryland
- The AVID Group, Palm Harbor, Florida

Securing the Storage Fortress

- Cbeyond Inc., Atlanta, Georgia
- George Washington University, Washington, DC
- R.C. Willey Home Furnishings, Salt Lake City, Utah
- Screen Actors Guild - Producers Pension and Health Plans (SAG-PPHP), Burbank, California
- Sinclair Community College, Dayton, Ohio

Storage Reliability and Data Recovery

- APM Terminals, Charlotte, North Carolina
- Chaffe McCall, New Orleans, Louisiana
- Corrections Corporation of America, Nashville, Tennessee
- CSX, Jacksonville, Florida
- Intuitive Surgical, Sunnyvale, California

Systems Implementation

- AOL, Reston, Virginia
- Bardel Entertainment, Vancouver, British Columbia
- CSX, Jacksonville, Florida
- MedicAlert Foundation, Turlock, California
- Pacific Title and Art Studio, West Hollywood, California

Judging Criteria

Judges evaluated and ranked the finalists in each category according to their substantiated storage networking solution attributes and achievements against a set of criteria such as:

- Financial return and measurable payback (returns on investment, assets, resources) through created/protected revenue opportunities or cost savings.
- Strategic importance to the business.
- Substantive customer impact (service, retention, acquisition).
- Positive impact on other business/organization units.
- Addresses system and department interoperability issues and heterogeneous platform integration challenges.
- Provides a strategic advantage to the business/organization while anticipating and accommodating the deployment of future storage networking solution initiatives.
- Supports the efficient and reliable data, information and application sharing/access between personnel, departments, divisions, etc.
- Addresses challenges of data, information and application security, recovery, business continuity, etc.

Thank you to our "Best Practices in Storage" Judges for SNW Fall 2006:

- Yuri Aguiar, Ogilvy & Mather Worldwide
- Dennis Anderson, Ph.D., Pace University
- George Feitel, Wavera
- Sharon Fisher, Computerworld
- Dale Frantz, Auto Warehousing Company
- Tony Fuller, Rent-A-Center
- Charles Inches, Corner Banca
- Julia King, Computerworld
- Ellen Lary, Lary.com
- Richard Lary, Lary.com
- Lucas Mearian, Computerworld
- Enzo Micali, 1800 Flowers.com
- Ron Milton, Computerworld
- Rick Peltz, Marcus & Millichap
- Larry Thomas, Landstar Systems, Inc.
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